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Textile World

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"Constructive Optimism" in Textiles

WHEN we entered textile journalism, we were profoundly impressed by the market jargon we encountered. We took it very seriously at first. It seemed necessary to become familiar with such terms as "plethora" and "paucity." One phrase which bothered us particularly was "conservative optimism." When we first heard a man say he was "conservatively optimistic" over the textile outlook for the new year, we were awed—and nonplussed. We are still nonplussed by the term, but we are not awed. In general, we have found it meant just what it didn't say; namely, that the man thought business was going to be rotten, but wouldn't admit it.

It was sprung on us again the other day. This time it made us angry. The present market does not call for "conservative optimism." Nor does it call for the opposite, "radical optimism," which we presume would mean that the possessor also thought business was going to be rotten but dared anyone else to admit it.

The situation seems to call for "constructive optimism." [Since we didn't coin the phrase, we make no apologies for it.]

It is not difficult to support this contention. Every textile development of recent weeks has been a demonstration of the effectiveness of constructive activities, and consequently the industry can afford to be "constructively optimistic." There is no harm, but much good, in deriving courage and hope from actual business improvement, so long as the industry has clearly in mind the methods whereby such improvement may be made permanent.

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Reports of better textile business come from all sections of the country and from all branches of the industry. Unfortunately there is in no other branch such tangible statistical information as is available in the cotton division; consequently that must be used as evidence.

In February, according to the Association of Cotton Textile Merchants of New York, cotton goods sales were 154% of production. Stocks on hand decreased 10.2% during the month, reaching the lowest figure recorded since these statistics became comparable on Jan. 1, 1928. Unfilled orders increased 24.7% during the month, and were higher on Feb. 28 than at any time since December, 1929—and are now well in excess of stocks.

The point to be emphasized is that, although sales in February increased nearly 37% over January, production increased only 5%. This would indicate a sane determination to build a reserve of orders, and to refrain from starting on a joy-ride. It justifies our belief, expressed in November, that "words of praise will go to the industry's heart, supplying courage, rather than to its head, supplying fat."

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The current textile improvement is, of course, partly seasonal and partly the result of accumulation of delayed purchasing. However there is a margin above this which represents the result of constructive effort. It is the reward which cotton manufacturers, full-fashioned hosiery manufacturers, and others, are reaping from heroic attempts to balance production to demand.

Current rate of sales will not be maintained throughout the year. As and when it "dips," it will challenge anew the courage of the industry. Will manufacturers become panic-stricken and offer goods at any price? Will they keep on producing, without watching the demand curve? Or will they realize that the textile industry is in a position to enjoy a permanent type of prosperity, providing the lessons of the last ten years are kept constantly in mind?

An affirmative answer to the latter question will mean short duration for the "dip," and assured return of the "up-swing."

The Week in Textiles

as Reflected in This Issue

GENERAL

Anti-Nightwork; Anti-Communist

Opponents of the movement to eliminate night work for women and minors have contended that its general adoption will result in serious unemployment problems and thus contribute to unsound industrial relations. Charles G. Wood, U. S. Commissioner of Conciliation, who has been active in combating Communistic propaganda, has a different point of view. He has urged the public to bring further pressure to bear on the minority of cotton manufacturers who have not joined in the movement sponsored by The Cotton-Textile Institute, in an address delivered at Statesville, N. C., March 11.

Garment Men Cooperating

Garment makers who met in Chicago last week laid bare the difficulties and problems of their trade and the meeting closed with much optimism over the various cooperative measures taken to improve conditions. *(page 28)*

Lubrication

Insufficient lubrication will invariably cause bearings to get hot; but improper clearance and other factors also contribute to overheating. *(page 39)*

Patents

Monopoly of a patent usually begins when the patent is finally issued and not when the application is filed. In certain instances, however, relief against infringement may be obtained before the patent is granted. *(page 39)*

Narrow-Fabric Weaving

The direction in which the shuttle should enter the shed in forming the face-picks in a narrow fabric depends upon the direction of twist in the filling. *(page 43)*

High-Speed Winder

Announcement is made that a high-speed rotary-traverse winder, originally exhibited at the Boston textile exposition, has given gratifying results in mill tests and is now ready for general distribution. One of the outstanding features of this machine is that it has no reciprocating parts. *(page 44)*

COTTON

Benefit of Market Study

An unbiased study of the market resulted in considerable, and satisfactory, change in output of a cotton yarn mill. *(page 24)*

Gastonia Cotton Carnival

A cotton carnival at Gastonia was one of a continuing series of events in the South to promote more general wearing of cotton. *(page 29)*

N.A.C.M. Overseers' Forum

Warp preparation and weaving were subjected to a clarifying discussion at a recent overseers' forum under auspices of N.A.C.M. *(page 32)*

Resolution Abolishing Night Work

Sales yarn spinners representing 98% of combed yarn spindles in the South producing for the gray yarn market met in Gastonia, N. C., March 6 and adopted resolution looking to the eventual elimination of the night shift for men as well as for women and minors. *(page 34)*

Cotton Goods "Self Discipline"

The discipline of matching production to demand such as has been instilled in the cotton goods trade during the last year or so is shown to be productive of beneficial results. *(page 35)*

Reversing Card Flats

Many concerns, writes a TEXTILE WORLD reader, have experimented with the revolving of flats on cotton cards in the opposite direction to the normal, but unsuccessfully. *(page 42)*

Cotton Goods Slow Down

As might be expected after the sustained spurt in business, cotton goods sales have been slightly smaller this

The Textile Outlook

CONFIRMATION comes from various sources of the excellent volume of textile business which has been booked during recent weeks. After any period of concentrated buying, a time for "digestion" is in order and signs point to the arrival of that time in several branches of the trade. This normal lull may be made the opportunity for consolidating recent gains rather than for forcing tired buyers by cutting prices. The lessons of the textile trade have been such as to steer its leaders away from the latter course. During the most active period there was some speculative buying and cut prices on resales by these holders must be distinguished from any change of front on the part of first hands . . . Cotton goods are quieter and raw cotton has eased from top levels. Wool goods men are awaiting fall season prices and these may not be so low as expected earlier in the year. Knit goods are firm and meeting steady demand. Silk goods are irregular.

The Business Outlook

CURRENT changes in industrial activity and trade volume are still indecisive as to spring business prospects. Early Easter and accumulated replacement demand have stimulated textiles, clothing, shoes and similar consumer lines, though February retail results were somewhat disappointing, and automobile sales outlook is still uncertain. Bonus payments and other early March financial transactions have increased money turnover; steel production continues its slow seasonal rise in contrast to last year; and spring commercial loan expansion has begun. Our index, up slightly to 79% of normal, is still at about average level of the last two months. The first year-to-year upturn in residential building since its long decline began in 1928, some seasonal improvement in employment, flattening of commodity price curve paralleling last year, better bond market and favorable crop prospects are the main straws of domestic cheer.—*The Business Week.*

week. Prices are holding steady, and there is a feeling that if manufacturers endeavor to secure still higher figures second hands may become more active sellers. A short period of consolidating its gains seems to be at hand for the market. *(page 53)*.

Cotton Goods Statistics

Cotton goods figures for February showing sales at 154% of production are evidence of the improved trade in that month. *(page 69)*

WOOL

Neps in Woolen Carding

The woolen card cannot maintain the full production of which the tape condenser is capable. Attempting such production is one cause of neps. Incorrect doffer speed is another. *(page 30)*

Brighter Outlook in Wool Field

A more cheerful outlook for the wool goods trade is seen by Dr. L. H. Haney in the "TEXTILE WORLD Analyst." He finds that activity has increased but not at expense of replacement margins. He expects that wool prices are reaching at least temporary stability. *(page 49)*

Fall Goods Prices May Surprise

Excellent position of wool manufacturers so far as stocks of goods are concerned, and stronger tone in world wool markets are factors which are causing doubt in the trade that reductions in new season goods will be made to the extent predicted during recent weeks. It is even possible that buyers may soon see that February prices were the "lows." *(page 53)*

American Woolen Records Loss

The issuance of the annual financial statement for 1930 by American Woolen Co. discloses another year of loss and dwindling surplus. *(page 61)*

Worsted Spindle Inventory

An inventory of worsted spinning spindles is being undertaken which it is believed will throw needed light on the capacity situation. *(page 67)*

KNITTING

Two-End Knitting

There are many disadvantages to the two-end knitting of circular silk hosiery, and practically no advanages. The two ends may not be from the same lot or may have different twists. *(page 42)*

Hosiery Is Firm

Continued curtailment has further strengthened women's full-fashioned hosiery. Prices are firm, but no advance is likely. All hosiery lines are in good call for spot shipment, and market tone decidedly better. Philadelphia strike has reduced surplus. *(page 55)*

Night Work Move Should Prove a Boon

Says Gen. R. E. Wood

"I READ with a great deal of interest the announcement of The Cotton-Textile Institute regarding the success of the movement for the elimination of night work for women and minors in the cotton mills," states Gen. R. E. Wood, president of Sears, Roebuck & Co., in a letter to George A. Sloan.

"Permit me to congratulate the officers and members of the Institute for this forward constructive step.

"There can be no argument against this movement from a humanitarian standpoint, and from the long range view no industry can be permanently successful unless it adopts a broad and liberal policy to its employees.

"But laying aside any humanitarian consideration, I believe that this step will prove a boon to the textile industry from a strictly business standpoint. For ten years the industry has suffered from overproduction. A step like this that will at the same time accomplish a much needed reform and eliminate some of this overproduction is bound to be of material benefit to the industry.

"The Institute is to be congratulated on accomplishing this voluntarily without being forced to it by legislation, though I believe that sooner or later such legislation should be enforced."

Only Spot Underwear Trade

Mills are falling behind in deliveries of men's lightweight cotton underwear; rayons are also active. Buying is steady but strictly spot, despite pressure. Heavyweight underwear has shown some improvement; no real demand expected for some time. *(page 55)*

Bathing-Suit Demand Gains

Bathing-suit demand is stronger and mills are writing duplicate orders. Prices have cut profit margin, and now hold very firm. Stocks are moderate. Spring sweaters continue spirited movement; fall sluggish. *(page 55)*

SILK

Edge Loops and Snarls

The loomfixer in a silk-weaving mill can eliminate many edge loops and snarls by rigging up one of two simple devices. Certain other precautions will help to prevent these defects. *(page 26)*

Silk-Soaking

Silk-soaking and tinting equipment, which employs forced-feed circulation to bring the soaking solution in contact with the silk, has been announced recently. Reduction of time required for soaking silk and marked savings in soap and oil are among the important advantages cited. *(page 45)*

Silk Goods Seasonal Clean-up

Cleaning up of seasonal stocks of silk goods has injured confidence in prices. Trend toward plains instead of prints in more expensive goods. *(page 53)*

Raw Silk Uncertain

Raw silk manages to hold its own though going through a series of daily ups and downs. The Japanese situation is yet not clear enough to instill confidence. *(page 60)*

RAYON

Cotton-Rayon Felt

For making felt of cotton and rayon, it is necessary to add a small amount of wool. A very thorough mixing is necessary. *(page 43)*

Rayon Profits Cut

Rayon industry is getting plenty of not-too-profitable business. Producers have difficulty in making deliveries, especially of 100 and 150 denier. Low prices cut profit margin, however, and there is talk of early liquidations by companies feeling the pinch. *(page 60)*

PROCESSING

Sulfonated Oils

Although vast quantities of sulfonated oil are consumed in the textile industry, the various methods for testing it give discordant results. Professor Grimshaw advocates that the Hart method of analysis be adopted by textile chemists as a standard procedure. *(page 36)*

Silk Dyeing

Cross marks and warp streaks caused by uneven weighting are defects commonly found in silk fabrics. A simple but effective preventive is suggested by a practical authority. *(page 43)*

Finishing Rayon

A new process of treating rayon fabrics with steam at about 15-lb. pressure enhances the appearance and handle of goods. Various types of equipment for carrying out this treatment are now available. *(page 46)*

Study Your Markets!

By Morgan G. Day
Vice-President, Indian Orchard Co.

The Indian Orchard Co. offers an interesting example of the application of fact-finding methods to yarn marketing problems. Mr. Day emphasizes the importance of an impartial attitude in dealing with vital problems. This is the one of several articles which will set forth individual views on trends in yarn merchandising.

Fifth Article in Series

WE ARE very glad to contribute to the forum of TEXTILE WORLD on yarn merchandising by describing the nature of the problems which we tackled somewhat over a year ago, and by outlining the steps which we have taken to meet the situation confronting us in the marketing of our product. Obviously, the merchandising problems of each organization differ according to size, sources of probable demand, type of competition, and whether the business is based on volume and price, or quality and style. To an outsider, then, the point of interest is not so much the actual details as it is our manner of approaching a solution to the difficulties, as reflected by these details.

Since 1890 the Indian Orchard Co. has been principally engaged in furnishing New England woolen mills with fancy cotton warps dressed on their loom beams. By direct personal contact we studied each individual fabric problem, with the result that we had the best of relations with the trade. Our relatively small novelty department was secondary, due to the fact that the business we received through various commission houses whose interest was based primarily on volume. Apparently, from their viewpoint, considering the effort required to sell novelty yarns, the amount received in brokerage did not compare favorably with that received from the sale of the familiar "bread and butter" yarns. Consequently they did not push novelty yarns.

Meantime, the cotton warp business was decreasing rapidly. Each season proved shorter and the field for substantial quantity with good credit risk became more limited. Then too, the demand for many varieties in retail-size quantities made it necessary for us to burden our plant with a large inventory. We were thus faced, as we surveyed the situation a year or so ago, with the prospect of a continued decline in demand for a substantial percentage of our production.

Our dominant thought has been that we must subject our problems to an absolutely cold-blooded analysis from the outside. When closely allied with a mill, it is all too easy to let hopes, hunches and preconceived ideas warp decisions; the danger lies in the fact that such warping is, very often, unconscious. Further, since both the theory and practice of marketing are such subjects for controversy, even among the experts, we realize that some elasticity in method is essential.

Broadly speaking, we favor, in so far as is possible in the textile industry, the adaptation of those marketing methods which have produced results in other industries. However, we emphasize the fact that such an adaptation calls for flexibility in detail as well as a different angle of approach. New obstacles as well as new opportunities arise once the inertia of gliding in well beaten ruts has been overcome.

We decided to investigate our possibilities from an impartial standpoint. Considering the seriousness of the problem we thought it advisable, in addition to our own investigation, to call in outsiders who were specialists and who would bring fresh minds to bear on the situation. However, as a start we wanted to be sure that our house was in order since it did not seem logical to base any new policies which might be developed upon the insecure foundation of an inefficient manufacturing plant.

There are dozens of cost accounting experts, but it was not improved bookkeeping methods that we were after primarily. What we did want were answers to the following questions:

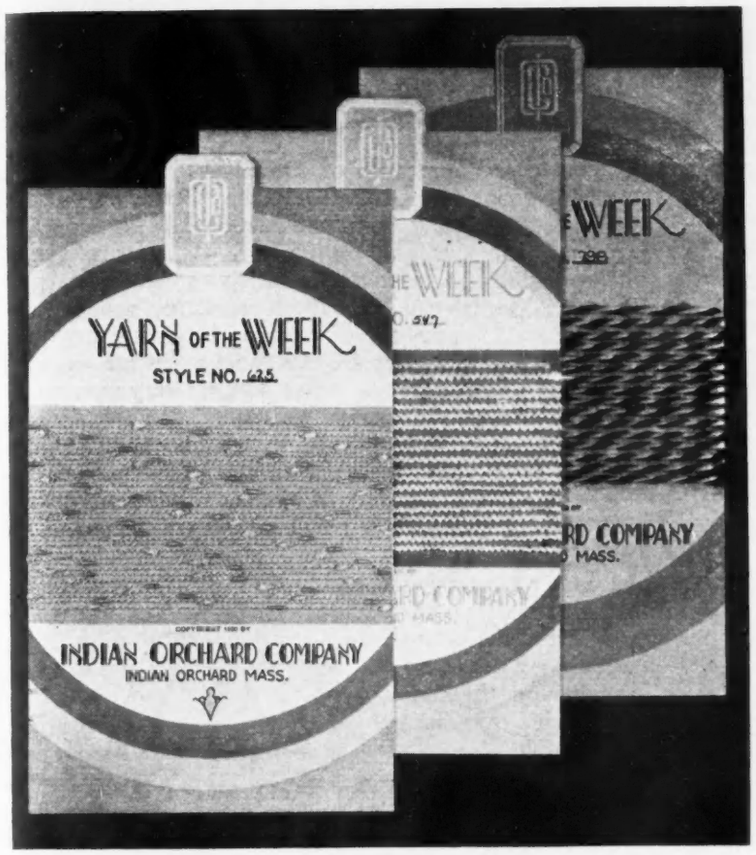
1. Was the productive capacity of our machinery handled to the best advantage?
2. Was our equipment not only in good repair, but properly arranged for the flexibility required?
3. What changes in equipment might be profitable?
4. Were our labor charges excessive?

This was not a time study job nor an accountant's analysis. We wanted a survey from the factory up to the cost sheets. We employed R. E. Loper & Co., of Fall River, for this work and found their recommendations reasonable and practical. Since carrying out the suggestions of this firm further developments have been stimulated.

This under way, we employed the Barrington Associates, of New York, to undertake our sales survey and to answer specifically:

1. Shall the Indian Orchard Co. continue to manufacture yarn?

REPLACE YARN PEDDLING



A group of the Indian Orchard Co.'s weekly suggestions

2. If so, what type of products are best suited to the manufacturing equipment and market requirements?

3. What specific sales methods should be used which would prove most practical?

The Barrington Associates offered sales survey experience gained in nearly every line of industry, and they subjected our marketing problems and possibilities to a thorough analysis. It is significant that a good part of the report dealt with the question of whether the Indian Orchard Co. should continue to manufacture yarn. Here was a problem on which an impartial opinion was particularly valuable. We were close to the mill. We wanted the mill to continue in operation and it is possible that, in making the survey ourselves, we would make the wish father to the thought and view the prospects with an undue optimism. Barrington Associates viewed our situation with neither optimism nor pessimism; it was just another problem to be analyzed scientifically.

Such a survey cannot promise the definite results possible in a study of costs, but it does offer valuable conclusions based upon the mass of information obtained. In dealing with the first question the conclusion was that the Indian Orchard Co. should continue to manufacture yarn, but should develop production and sales along lines indicated in the answer to the second question. The study of types of products best suited to the manufacturing equipment and market possibilities showed a widening horizon for the use of novelty yarns. Naturally we do not care to disclose the specific data in this part of the report, but one interesting point which was brought out was that there had been insufficient activity on the part of mills to arouse the dormant demand for novelty fabrics.

Upon the problem of specific and practical sales methods the report pointed out that, with emphasis placed upon the sale of novelty yarns, there was need for a sales organization which could concentrate efforts along these lines. The conclusion reached was that, considering the particular problems of our mill, direct selling offered the best possibilities.

Accordingly we opened a New York office at 40 Worth St. After granting a mutually agreeable period for the fulfillment of commission house contracts, we contacted with salesmen of likely prospects, with a view of getting the fabric sale angle. These calls were later followed up by visits to the home plants. Almost at once we discovered that, due to former selling methods, there was little appreciation of the part novelty yarns can play in fabrics. We were in the field to offer our suggestions in yarns which, when handled by skilled weavers and finishers, would create new styles in construction and effect. Should our first effort prove impractical we were ready to adjust the yarn to suit the customer's particular purpose.

As another step to focus attention on novelty yarns we have instituted recently the "Yarn-of-the-Week-Club." Each week a selected list of clients find on their desks a sample card of one of our yarns. Often the yardage may have to be changed, the twist altered, or a different blend of fibers introduced into the yarn to conform to an idea of a customer, but such changes often produce striking results. It is amazing what these experiments will sometimes develop accidently.

This type of advertising has brought us unexpected results, but it has also drawn our attention to a particularly difficult merchandising problem. Obviously, the choice styles of a given house for the coming season are closely guarded. If our latest developments were broadcast would they not defeat their own purpose? On the other hand, it would certainly be poor advertising to feature something which was a back number. This is an example of new methods bringing new obstacles and we shall have to continue wrestling with the problem, but the benefits outweigh the disadvantages. We feel that our "Yarn-of-the-Week Club" is logical because it carries suggestions calling attention to the possibilities latent in novelty yarns and because, by broadening the field of interest, it has awakened more branches of the trade to our offerings.

Needless to say, our best efforts are directed toward working most confidentially with a client in creating a yarn which will be confined for a length of time within that particular trade. This also brings up problems, but we feel that we are on the right track. Also, needless to say, we have not neglected our business on loom beams. Every effort has been expended to retain and increase this trade. We are merely compensating for its long

(*Continued on page* 69)

Preventing

Edge Loops and Snarls

in Silk Weaving

By H. E. Wenrich

ACCORDING to old theories, the selvage on the cloth is 90% of the sale. There is no question that a good, smooth selvage will improve the appearance of any piece of merchandise and will help sales, but there are many firms today which save as much as possible those extra ends formerly used in the selvage. Many will remember the selvages on crepe-de-chines a few years ago which were ¼ in. wide, and some which were ½ in. or more. Look at most of the crepes today and glance at the selvage. What do you see? No selvage at all! The last two dents in the reed carry extra ends to hold the edge, and there you have the elimination of the selvage. Even though the selvage on some material has become a back number, the edge must be neat and smooth, regardless of the price for which the cloth sells.

When there is a big demand for cloth, even satins are woven without selvages. A few ends doubled in the last two or three dents provide the strength for the edge to hold the filling—and the neat edge one mostly takes for granted on a satin is gone. Chiffons and georgettes are now and then run without selvages when there is a big demand for the material, the temples holding the edges out to keep the filling from tearing the edges and from affecting the width. No matter what the cloth may be, there are times when it might be run without the selvages. Again the selvages might be a foot wide and still a ragged-appearing edge might be made. To make a neat edge with or without selvages is the aim of the manufacturer.

There are several reasons for ragged edges and the poorly woven piece resulting from such edges. Some of the edges have a baggy and uneven construction, while others have loops and snarls showing up and depreciating the value of the cloth considerably. Bagginess, loops, and snarls can be eliminated—and should be. The different methods for avoiding these defects are various. Some fixers will strive all day to stop a certain defect and will then throw up their hands admitting defeat.

The loose appearance of the edges is caused in the warping room, and can be overcome. Some warps have the habit of pulling in on the edges when beaming and causing them to pile up on the body of the warp, giving it more pull and stretch. Naturally when the warp is weaving, the edge will be loose and cause a baggy appearance. This manner of beaming is satisfactory on a satin warp if the edges are run in as a selvage on separate shafts with different weave, but are very unsatisfactory on crepes and taffeta weaves. Likewise warpers who tear off bits of warping papers and places on the the edge will cause the same trouble. The warper believes this is the best way of overcoming loose edges on the warping mill, and the result is poorly woven edges on the loom. If the edges are beaming loose, more warp paper across the entire warp and more weights on the tension will overcome the trouble.

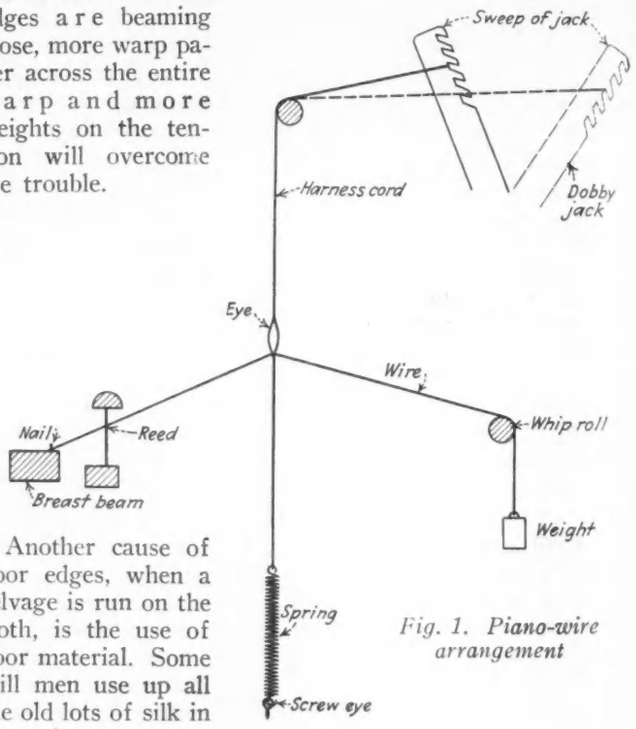


Fig. 1. Piano-wire arrangement

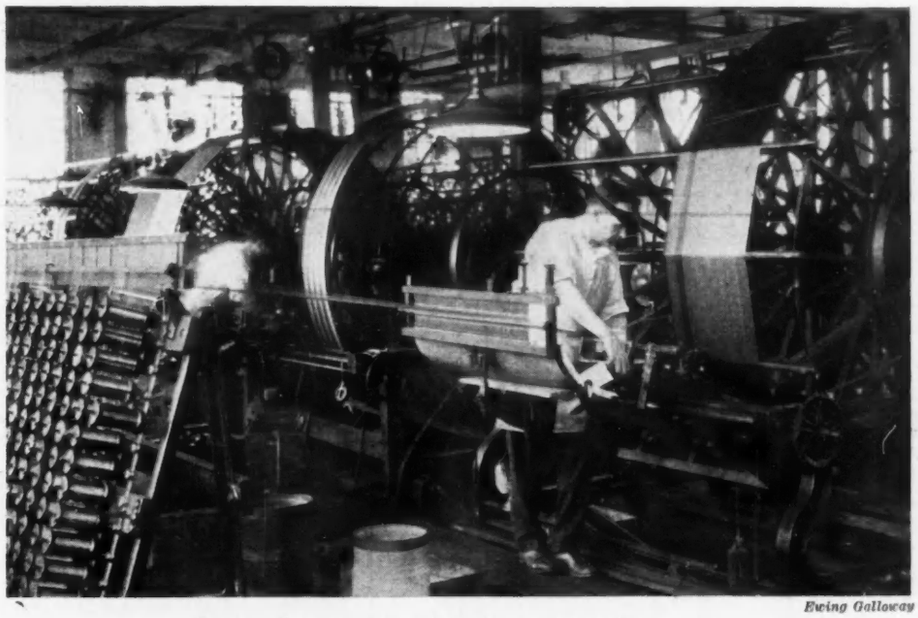
Another cause of poor edges, when a selvage is run on the cloth, is the use of poor material. Some mill men use up all the old lots of silk in the edges without regard to the finished product. It is not a bad idea to use up odd lots of raw stock in the selvages if the stock is not rotten and damaged. On chiffons and georgettes, the best selvage that I have seen so far is the boiled-off organzine. This makes a neat edge and also saves the reed from cutting so badly. Other causes for badly woven edges lie in the filling and in the fixing.

"A Few Tricks in Fixing"

If the filling is very wiry, the greatest chance of any is open for making poor edges. Wiry filling causes loops and snarls that damage the material a great deal. However, with a few tricks in fixing, these loops and snarls can be overcome. Besides the loops caused by wiry filling, there also will appear at times small loops along the edge due to other causes. At times the filling

will be pulled into the edge of the cloth from a fraction of an inch to even as far as a foot, weaving in and spoiling the material.

If there are any loops on the plain side of a 2x1 loom and none on the box side, there are three possible causes for the defect. One of these causes is wiry filling, one is some nick or obstacle on the lay, and one is trouble in the shuttle. If the defect occurs on but one twist of the filling, the filling or the shuttle is at fault. If the shuttle is at fault, new tensions, shuttle pegs, and fur lining will stop the trouble. If the fault is a nick on the lay at some point, cutting off or filing away the nick will overcome the defect. If it is wiry filling, the filling will have to be reset or a damp rag hung on the filling board. Wrapping all the filling, a few quills at a time, in a damp rag will also stop the trouble. When these loops appear on the box side, a fixer has more trouble to contend with.



Ewing Galloway

Loose edges are caused in the warping department

If the loom is weaving two and two, the box side will often be the place where most loops appear. The wider looms weaving narrow cloth are more troubled than looms filled with cloth taking most of the reed space. The filling may have a perfect set and still cause snarls and loops, due to the long stretch between the edges of the cloth and the box. In overcoming these snarls and loops caused by the long stretch, a piece of wire, a bit of harness cord, and a spring will overcome the trouble.

Fig. 1 shows how to rig up this trouble-shooter. The dobby jack in back of the harness dobby jacks is used for this purpose. The harness cord is doubled several times and an eye is made in the place shown, which will rise and fall at the same height as the harness eyes. On the bottom of the harness cord a shaft spring is attached and is secured to the floor by means of a screw eye. A stretch of piano wire is next placed through the harness-cord eye and fastened on the breast beam at a position which will place the wire about an inch inside the edge of the reed. On the other end of the wire a small weight is fastened. The wire moves up and down as it is raised and lowered by the dobby jack. The wire should be in lowered position when the top shuttle comes out of the plain side and enters the box side. As the bottom box is coming up, the wire is raised by the dobby jack and lifts the filling from that shuttle up off the race plate so the filling from the bottom shuttle will not snarl it and drag it into the cloth. This same fix can be used in narrow looms if there is any trouble with this type of snarl.

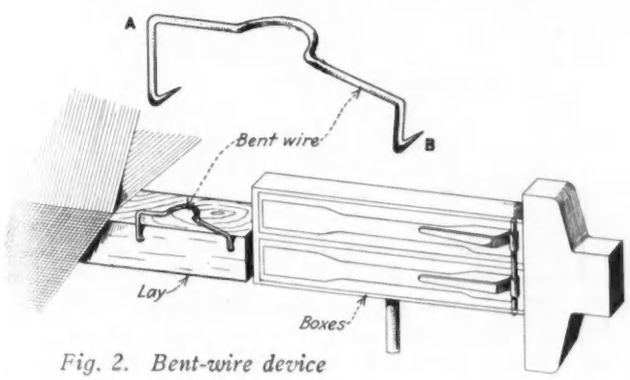


Fig. 2. Bent-wire device

There is still another device that can be used to advantage on the lay without calling on the dobby for help. This fix is illustrated in Fig. 2. The diagram shows the shape of the device, which consists of a wire suitably bent, and shows how it is attached to the lay in front of the boxes on the box side of a 2x1 loom. There are two points ground on the wire so it can be tapped into the lay. The end *A* is about an inch higher than the end *B*. The length from *A* to *B* is, straight across, about 6 in. to 1 ft., depending on the distance from the edge of the cloth to the box. From *A* down to the bend of the point is from 2 to 3 in. The point *B* is nearest the box. When the filling comes out of the shuttle, it passes over the wire and is held back from the other twist. As the shuttle is picked across the lay, the filling slides along the wire and passes off clear without snarling the filling in the other shuttle.

Often very small loops occur on the edge of the cloth about $\frac{1}{8}$ in. in length. These loops are sometimes caused by an empty dent left in the reed along the edge. Sometimes the filling will be looped in the same manner if the extra ends intended for the edge have been broken out and have been entered in one heddle, making a cord-like appearance. These loops are very small, but troublesome. When the edge is drawing in, the harness and the reed are the cause. In this case the ends may be broken out and placed in the proper heddles and dents.

If the filling is trapped in the box on either side, the picker may have a small sliver which needs trimming off. The hole may be ragged in the picker, requiring a new picker. The picker stick may have a sliver near the picker catching the end and calling for trimming, or the box may have a splinter which is causing the trouble. By taking the length of the thread and holding it back to the point where it caught, the place can be judged correctly.

(*Continued on page 69*)

Cooperative Efforts Launched to Aid Garment Makers

NEED of coordinated action between millmen, converters and manufacturers as the only solution to curb the evils prevalent in the industry, was the message given to the International Association of Garment Manufacturers by President Phil J. Stone, at its 24th annual convention held at the Stevens Hotel, Chicago, March 3 to 5.

"The sensible way to handle our present problems, as I see it, is through a committee. No definite instructions will be given this committee but suggestions will be made," Mr. Stone said, "This group should meet with the leading merchants of the country, with the United States Chamber of Commerce, and with the manufacturers of piece goods. We as manufacturers must consider ourselves very important to the welfare of the country."

The president further urged that immediate steps be taken by the garment producers to work with the committee set up by their association. The worst evils with which the cutters must contend, Mr. Stone pointed out, are huge returns of merchandise, over-production, and continual battering down of prices by retailers.

Cooperative Promotional Ventures

Another highlight of the convention was the enthusiastic approval of the two cooperative advertising ventures to be sponsored by the organization. National Wash Dress Week, which was inaugurated last year, will be continued, and a National Work Clothes Week added to the activities of the association.

A. F. Allison, secretary of the association, said in commenting on the plans: "The success of National Wash Dress Week has wielded such a powerful influence in selling and making known the style and utility of cotton and rayon wash dresses that we believe a concerted merchandising campaign will prove equally effective in developing the market for work clothes."

"When the cutters get together and supply the retailer with good promotional matter, work clothing will come out of the dark corners where it is now generally relegated. The consumer will have a chance to see the styles. Retailers have indicated that we have their fullest support." The week set is May 18 to 23.

The advantages of such a campaign at this time were brought out as follows:

1. It would aid in reducing the price factor as the only selling argument by focusing attention on work clothes with style.
2. It would eliminate the feeling that introduction of style in work clothes means an increase in cost which cannot be written into the price.
3. It would move more merchandise at profitable prices than the best promotional plans of any manufacturer working alone, even at great cost.

The date set for National Wash Dress Week is April 20 to 25. President Stone indicated that over 5,000 retailers will use the window displays and broadsides in conjunction with the radio and newspaper advertising at that time.

The first impression of the exhibit held with the convention, was the predominance of bright colors and tailored effects in the work clothes. The drab colors used in this type of clothing are a thing of the past if the exhibit is a criterion. The use of preshrunk fabrics in designing the clothing has made possible the new effects in tailoring.

Heavy Garment Group Discussion

Probably the most important group meeting was that of the heavy garment manufacturers. Edward Goldman was unanimously re-elected chairman for the third time. The western delegation led by David M. Greenwald, dissatisfied by the competitive conditions between the eastern and western manufacturers stated that a program has been laid out to develop membership within territorial lines although it will remain within the jurisdiction of the parent body.

The charge that eastern manufacturers were responsible for the chaotic conditions in the industry by refusing to uphold the standards of quality and selling alone on a price basis, has necessitated the break. The program outlined by the western group consisted of the following provisions: (1) Continuance of the trading-up policy; (2) Organized constructive policies in production and merchandising; (3) Stress on style and quality instead of entirely the price factor.

Mr. Greenwald further attacked the arbitrary listing of the Wholesale Dry Goods Institute and complained that jobbers used the list to apologize for inability to supply business to those classified as retail sources.

Following the annual banquet, a tableau and mannequin parade showed the vastly improved styling of cotton wash dresses. All doubt was dispelled as to the definite place of these goods in the fashion world. Leading designers attending the convention predicted that the new tailored effects will have immediate consumer acceptance. Miss Susan Bates, of The Cotton-Textile Institute, and Miss Evelyn J. Boesch, of the International Association of Garment Manufacturers, directed the fashion show.

The association's entire slate of officers was re-elected including Phil J. Stone, La Crosse, Wis., president; Ralph Hunter, New York, chairman-of-the-board; C. T. Habegger, Berne, Ind., vice-president; Ricard J. Mack, Cincinnati, Ohio, treasurer; and A. F. Allison, New York, secretary.

Yellow eyeleted batiste, hand embroidered, shown by the Durene Association. (Modelled by Miss Estelle Jenkins)

Charming dress of plaid gingham, woven by the Cramerton (N. C.) Mills, exhibited by The Cotton Textile Institute. (Modelled by Miss Buth Ballard)

Mrs. Joseph H. Separk, daughter of the late George A. Gray, pioneer textile manufacturer of Gaston County. Mrs. Separk is president of the Gastonia Woman's Club which sponsored the Cotton Festival and Style Show

White coat, hat, bag and gloves, all made of cotton, exhibited by The Cotton Textile Institute. (Modelled by Miss Mary Morris)

Spectator's sport suit of light green Durene mesh, exhibited by the Durene Association. (Modelled by Mrs. Raleigh Armstrong)

Gastonia Festival

Focuses Attention on Cotton

From* TEXTILE WORLD'S *Southern Office

KING COTTON, whose rapid convalescence has been widely heralded in recent months, was again enthroned in the minds and hearts of southern people last week. An intensive "wear cotton" campaign, inaugurated in Gastonia several months ago, to awaken consumers to the fashion appeal of cotton goods, culminated in the elaborate Cotton Festival, March 5 to 7.

More than 2,500 people crowded the Gastonia High School auditorium Friday evening for the style show, while hundreds of other visitors were unable to gain entrance to the building. Sponsored by the Woman's Club of Gastonia, the style show was a fitting climax to one of the most unique and effective events of its kind ever staged in the South.

The Cotton Festival opened Thursday evening with the colorful "cotton ball," engineered by the local post of the American Legion. Many of the ladies were gowned in cotton frocks while Sonny Thorpe's Durene Cotton Pickers, a ten-piece orchestra furnishing the music, made their initial appearance in white cotton tuxedos.

Stylish cottons for every occasion were displayed in the fashion show Friday evening. More than 70 young women of Gastonia acted as mannequins for The Cotton-Textile Institute, the Durene Association of America, and the local merchants who participated in the exhibition. The largest crowd in the history of Gastonia assembled for the brilliant display.

Beach and lounging pajamas, evening gowns of cotton lace, afternoon frocks of organdies and cotton net, sport costumes and many other types of feminine attire were shown. Materials exhibited ran all the way from ginghams for pajamas to eyelet embroidered cottons for evening wear. Cotton hosiery was worn by the mannequins.

Mrs. Joseph H. Separk, head of the Gastonia Woman's Club, presided at the style show. David R. Coker, of Hartsville, S. C., cotton expert, and Mrs. E. M. Land, president of the North Carolina Federation of Women's Clubs, were honor guests. Dr. W. H. Frazer, president, Queens-Chicora College, Charlotte, N. C., delivered the principal address. He declared that southern cotton growers and manufacturers have been negligent in presenting to the buying public the points of superiority inherent in cotton products.

Interesting exhibits of cotton products, featuring both the old and new uses for the staple, were on show at the Cotton Exhibition in the Grove Building. Three style shows in miniature and displays of smart wall coverings, bedspreads, rugs, draperies and other cotton materials featured the exhibition. Miss Katherine Bowers, of Gastonia, was awarded first prize for the neatest and most stylish dress made entirely of cotton.

Cooperating in the style shows were The Cotton-Textile Institute, represented by Miss Catherine Cleveland; the Durene Association of America, represented by Miss Grace Walton; and the North Carolina Extension Department, represented by Miss Helen Esterbrook.

Incorrect Doffer Speed Most Likely Cause of Neps in

Woolen Carding

By Norman Booth, A.T.I.

WHAT is the cause of neppy woolen yarns? Who is responsible? What is the remedy? The inquiry as to the cause can be narrowed down by exonerating the spinner; he cannot be held responsible for neppy yarn. Therefore the cause can be traced to the material, the card, and the operator. When the neppy yarn has its origin in the material, it means that materials have been thrown together in the picking room with no regard to the ultimate use. Noils already containing neps have been used in fine woolen blends; or cotton—a satisfactory component in the right blend—has been used regardless of the type and quality of yarn to be made. The remedy is obvious, and the fault should not recur.

Cards Responsible

It is on the cards that the majority of reasons for neppy yarns are found. The first consideration is the capacity of the machine for its work. The incapacity of the breaker cards is certainly responsible for much neppy yarn.

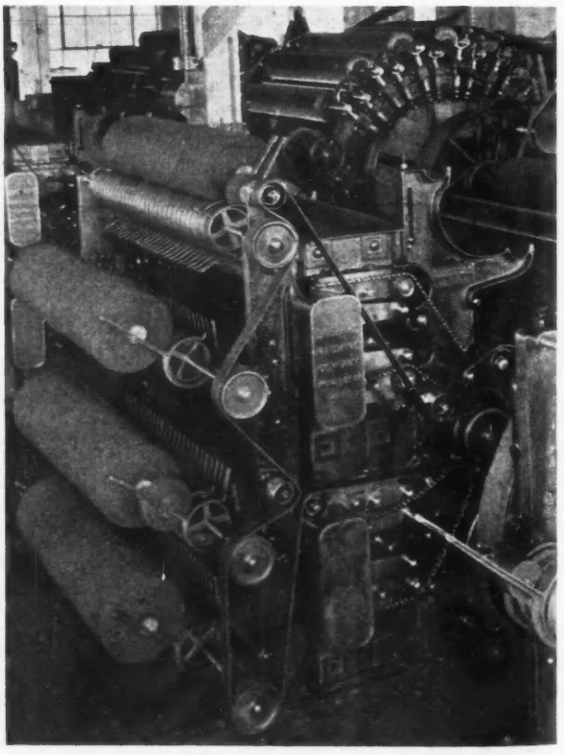
Industry has seen the tape condenser come into its own; it has seen the average number of threads taken from a set of cards more than doubled and the yarn production per spindle steadily increased. We welcome the tape condenser and the consequent increase of production, but must not forget that the condenser is a separate machine from the card and makes no contribution whatever to the carding capacity of the set.

It is ludicrous to place blame for neppy yarn on the tape condenser where previously there was a ring doffer. The trouble is simply that the machine is incapable of carding properly the increased production which the tape condenser is expected to turn off. With a 5-ft. set having two main cylinders and a breast on the breaker and two main cylinders on the finisher, it is possible to turn off good roping 9-yd. to the dram, and to produce 30 lb. per hour. But it is certainly asking for too much, if on that same machine a tape condenser is introduced, to expect a production of 50 lb. per hour. The condenser could turn it off, but the quality undoubtedly would suffer. Overproduction then is a sure path to neppy yarn; and again the remedy is obvious.

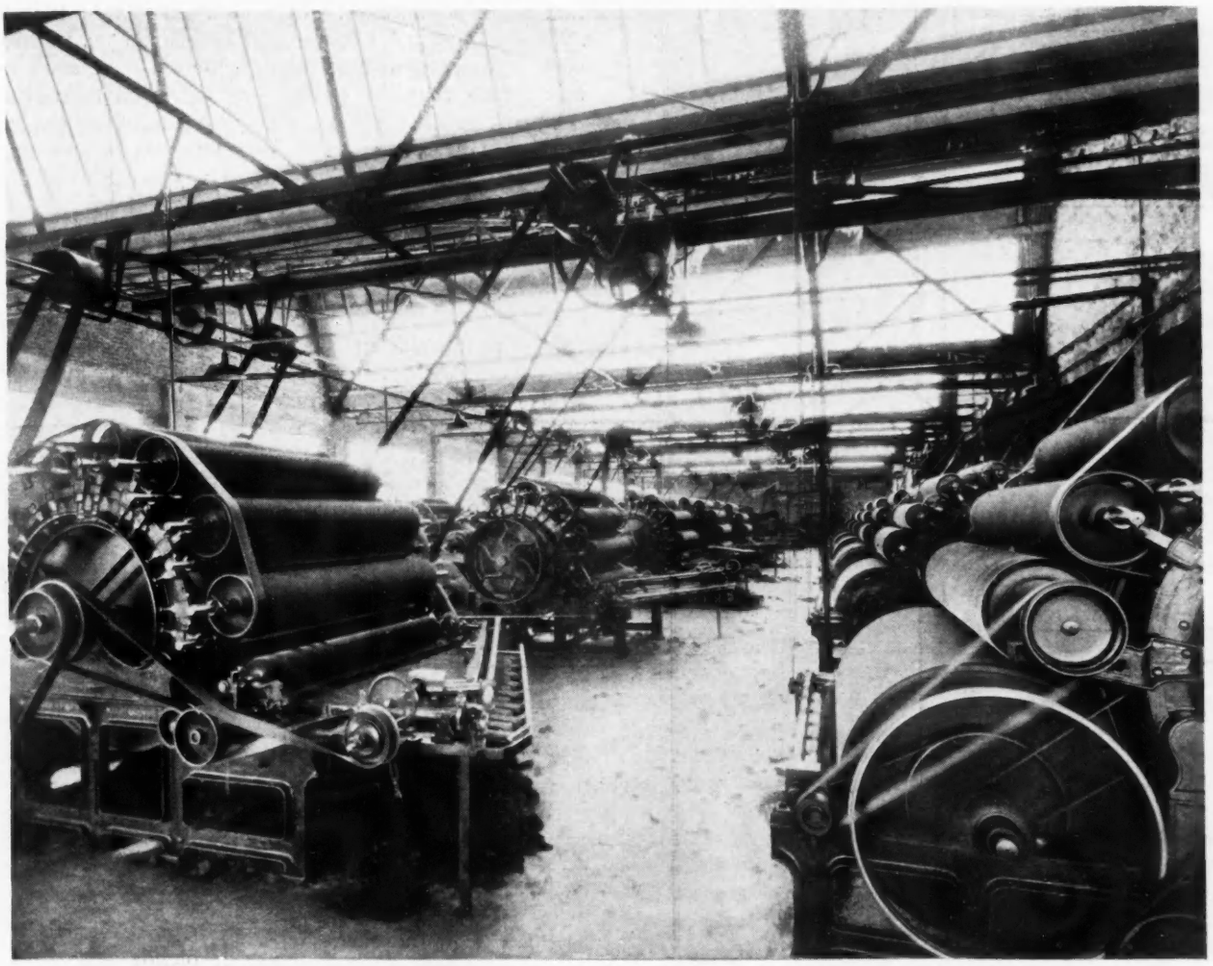
Condition of Machine

The condition of the machine is the next factor. When is a machine in such condition that, other things being equal, neppy yarns can be prevented? First, we must consider the type of clothing on the machine. Is it suitable for the particular material? Here is an example where it is not. A machine is adequate to deal with low-class work; but when a blend containing short, colored noils or fine cotton is put on to the machine, a neppy yarn results. Why? Because the clothing of the breast part is, say, a 40/4/18/22 convex wire, and the best it can do is to roll the material and produce neps. Although these neps may be decreased in size before the roping is made, they are also considerably multiplied in in number. It does not require an expert to trace the origin of the "neps." They are plainly advertised on the workers over the breast part; and, do what the operator can, he is up against a stiff proposition if called upon to maintain a reasonable production and make a good yarn.

The type of clothing selected for a machine is, then, an important and vital factor; and assuming the clothing to be adequate, the condition may be more easily defined. A card, to deal with all types of blends, must be level,



Full production capacity of the tape condenser cannot be utilized successfully



Incorrect doffer speed causes overloading of cylinder

smooth, and sharp—with a line drawn between sharp and keen, since the keen card may prove a nuisance.

If it can be assumed that the choice of material is correct, the blending good, the clothing of the cards suitable, and the condition of the machines as perfect as possible, the causes of neppy roping can be narrowed down to two factors—the setting of the clothed rollers and their relative speeds. Clothing, be it in the best of condition, is of no use unless it can be brought to bear upon the material. On no account must working rollers touch; yet they must not be so far apart as to permit the material to be rolled.

Although correct setting depends upon the material, one thing is certain—the teeth of the fancy must pass through those of the cylinder; the fancy must be "in." On the other hand, the fancy must not raise the material completely out of the cylinder, but must leave it on the top of the teeth. On some materials and with some fancies this is a difficult thing to accomplish. There can be no fixed law for setting the fancy, since its speed and the type of material run are the controlling factors.

Broken-backed, rough, and pointless teeth on the doffer often result from a faulty angle of the stripper setting. Doffers are provided with a range of change gears, but one can find doffers galore on which a gear is securely fastened in such a manner that it defies removal, and becomes a fixture; hence—and what is more vital—the speed of the doffer becomes a fixture. When this is so, the efficiency of the doffer is reduced, and, in a like ratio, so is that of the fancy.

It is upon the amount of material cleared away that the success of the fancy depends, and unless a maximum amount of material is doffed from the cylinder a foundation is surely being laid for neppy roping. The art of woolen carding is to open the material and pass it through the machine, not carry it round the swift. The clearer the fancy roller is from doffing point to receiving point, the clearer will be the roping.

Closing up the setting of the doffers on the breaker will many times make a marked difference in the appearance of the sliver, and often neppy ropings have been considerably improved by readjustment of doffer settings. The speed of the rollers is equally as important as the setting. It is obvious that if the cylinder speed is increased, more work will be done; and it is equally obvious that if the doffers and workers are sped up, less work will be done; but it does not follow that to run swifts at top speed, and doffers and workers as slow as possible, so much work will be done that neps can not occur. The material being nepped may be only one component of many in the blend; and to accommodate one component to the exclusion of the rest may be fatal to the ultimate yarn.

Sometimes a poor sliver can be turned into something better by increasing the speed of the doffers, although the actual working power of the doffer is then being decreased. But the most probable cause of neps is an overloaded cylinder, which may be due to an improperly adjusted fancy or, more probably, to incorrect speed of the doffer.

Warp Preparation and Weaving

Discussed by N.A.C.M Overseers

HIGH-SPEED warping, production of slashers, shuttle-changing looms, large take-up rolls, and silk reeds were among the topics discussed at the meeting of warp-preparation and weaving overseers held under the auspices of the National Association of Cotton Manufacturers in the Chamber of Commerce Building, Boston, Feb. 10.

High-Speed Warping

The first question to be discussed at the warp-preparation session, held in the morning, was: "What are the advantages of the different packages: spool, cone, or parallel tube on high-speed warping?" One of the overseers stated that with the high-speed warper on 28s yarn he was able to run at a speed of 27,000 yd. an hour, while another man said that with the high-speed warper and taking off a cone, he was able to run at 518 yd. a minute. Asked what advantage followed warping from a cone, he brought out the fact that one is able to get an evener tension and a larger package up to 80,000 yd. in length and 3½ lb. in weight. It was asserted that there was very little breaking when changing from on cone to another, one mill averaging eighteen stops to a beam on 28s yarn on account of soft yarn, transfers, and the like. It was shown also that it is possible to run as fine yarn as 60s on high-speed warpers; and that with 40s single-ply yarn, as many as 33,000 yd. can be run on a beam. Production on various types of high-speed warpers on 28s yarn was said to be as high as 27,000 yd. an hour, and on 29s yarn, over 31,000 yd. an hour. At the latter speed, in one mill the average number of breaks per beam is about six or seven.

In answer to the question as to "what are the apparent advantages of slashing from section beams made from wound packages and warped on high-speed warpers," it was asserted that better loom operation with less stops per loom per hour, less ends down, better warps, greater production, and less changing of sets are among the more important advantages. One overseer stated that on a 29,000-yd. beam he found that he had 90 yd. more yarn on a high-speed warper than on the old-style equipment; this means that the stretch has not been taken out of the yarn; and therefore the yarn beams much better. The only drawback to high-speed warping which was mentioned is that it is necessary to watch the double friction closely to prevent slack beams.

Production of Slashers

The third question to be discussed was: "What are the principal factors that govern the production of slashers?" In answer to this question one overseer replied that two important factors are good warping and the use of a size mixture containing a softener which will prevent sticking on the cylinders so that slasher speed can be governed entirely by the drying capacity of the machine. The weight of squeeze rolls was also shown to be an important factor in slashing. One overseer remarked that he found a 350-lb. roll to be satisfactory for running 4,700 ends of 40s single yarn for broadcloth, 50,000 yd. on the beam, at 25 yd. per minute.

Another man stated that he used various combinations of rolls. For example, when running 5,400 ends of 50s at 32 yd. a minute he uses a 450-lb. squeeze roll on the finisher and a 350-lb. roll on the back. Asked how much size he thought he was getting into the yarn, he answered that, although he had not made bone-dry tests, he figured that he was getting about 14% size.

Running a heavy broadcloth, as high as 184 sley, from 45s yarn at 24 yd. a minute, one of the foremen asserted that he finds it necessary to use a 642-lb. roll, and that he is able to employ the same roll in running a voile of 2,500 to 2,600 ends. In one mill, which is equipped with a drying oven, it is the practice to leave about 7% of moisture content in the warp and 9% of solid size. Two causes given for cylinder laps on fine yarns were: (1) a light roll which will not properly squeeze out the starch, and (2) lack of sufficient softener in the sizing mixture. Under proper conditions it was said to be possible to run 40,000 yd. of 40s single-combed broadcloth without running into cylinder laps.

The next question offered for discussion was: "What are the advantages of automatic temperature control of the drying cylinders from an operative standpoint; and what are the advantages of the constant level and circulating systems?" Practically all of the speakers agreed that automatic temperature control has apparent advantages, not only in sizing cotton, but also in sizing of rayon, in that the temperature of the size does not vary more than one or two degrees and uniform results are obtained. Temperatures ranging between 196 and 200° F. were said to be satisfactory for sizing mixtures, although one overseer pointed out that the method of preparing the size has a great influence in this matter.

Considerable discussion was evoked by the question: "Are double size-boxes of any advantage in the slashing of high-sley warps?" The double size-box was shown to be of especial advantage in running crepes and voiles. Usually one box carries only the tint, and the other, the sizing material. One overseer reported that when he first started running crepe yarn he had a small size-box containing the tint arranged over the size-box, but he found that by putting the two boxes on a level he was able to secure better results. In using double size-boxes, another overseer voiced his preference for the arrangement having the front box at about 3 in. higher elevation than the back box, so that the yarn goes up from the bottom

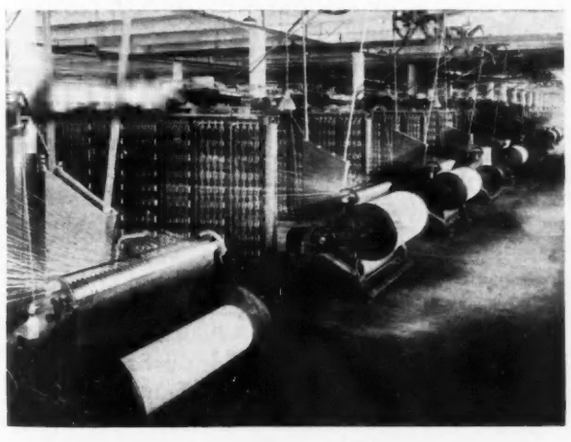
box to be tinted. Representatives from two mills reported that they have their double size-boxes on the same level and that they tint and size at the same time, putting the bluing right into the size.

Preparing Rayon Warps

It was next asked: "What is the most economical method of preparing rayon warps, the cotton or the silk method?" On a small number of ends, say up to 500, one man replied that he believes the cotton method is satisfactory, but on a large number of ends prefers the silk method. He explained further that in his mill they had converted the horizontal warper to a high-speed warper and are running anywhere from 3,500 to 5,000 ends at 190 yd. per minute; and with 5,000 ends, are averaging only about 30 breaks to the warp. Asked how he leased the warps, he replied that he put two leases in, one lease every four cuts, when warping 150-denier yarn from cones, which are held on a magazine creel holding 600 ends. Another overseer stated that although he originally used a horizontal warping machine, for the last year or so he had been using the cotton system and found that by making warps without paper on a flange beam he was able to make better warps at a lower cost. In answer to a question as to how many ends he ran in, how many ends he put on the beam, and how he leased them, he replied that he ran up to 64,000 ends, 64 yd. per cut, that he tried to get six beams to the set, and that he used the regular silk beams. Despite the fact that he had to warp the section beam first and then run it over the beams, thus making it a separate operation, he was able to slash ten cuts in 45 minutes, averaging about 15 or 16 yd. per minute. The weaver from the same mill volunteered the information that he gets an evener tension all the way through the goods and that very few ends run out since this method has been adopted.

Asked whether they slash rayon made on the cotton system, the same was as they do that made on the silk system, one overseer replied that slashing was performed in the same way, the leases being made ready on the warps before they get to the slasher. In sizing rayon, it was the opinion that it is better not to use the immersion roll and to keep the rayon out of the size. It was also brought out that it is advantageous to get as many yards on the warping beam as possible; for instance, 20,000 yd. in a set.

The next question proposed was: "What are the practical limits as to the number of ends and lengths on the cotton system and on the silk?" One man stated that on a large number of ends (4,000 to 5,000) he usually ran ten 64-yd. cuts. Another said that it was his opinion that the more ends you can get on, the better it is, and he planned to have around 600 ends to a beam. Still another overseer stated that the number of warp ends has practically no limit, and in the case of 75 denier yarn, he is able to obtain up to 13,500 ends, although on coarser deniers it is not possible to get that number. In running raw silk one speaker remarked that he has put 15,000 ends on a section beam when using the cotton system.



Installation of high-speed warpers

Types of Section Beams

The next question to be asked was: "Which produces the best warp or section beam, the dead-spindle creel, the live-spindle creel, or the cone creel?" For high speeds, one overseer said that he uses the cone creel and on others the dead-spindle creel, while another stated that he used only the dead-spindle creel and that that gave very good warps. On high-speed warpers use of a silk beam with an adjustable head was asserted to be very satisfactory.

The final question offered at the morning session was: "What are the reasons for and against humidity in the warping room?" It was the consensus of opinion that a humidification system is not necessary in warping rayon and that the yarn runs better when handled in a comparatively dry atmosphere. Asked what percentage of stretch he gets on 24-filament, 150-denier viscose yarn, one overseer replied that 7% is the usual guarantee which he gives, but in special cases he has gone as high as 12%, and in other instances there is a demand for no stretch.

Looms and Take-Up Rolls

The afternoon session was devoted to weaving problems. The first subject discussed was the advantages of a shuttle-changing loom over a bobbin changer for fine cotton, rayon, and silk fabrics. One speaker declared that he could see no advantage in the shuttle changer from a production standpoint, but another stated that the shuttle-changer reduces defects at changes to minimum.

The question of production was said to depend upon whether the loom is of the type which stops for a short period during the change, or is of the type, generally employed for crepes, which does not stop. One speaker declared that the high-speed which is possible with the shuttle-changing loom more than makes up for the time lost in changing. Another declared that, for low-count yarns which do not require delicate handling, the bobbin-changer is as satisfactory as the other.

The second weaving topic was the advantages of the large take-up roll. The chairman remarked that fabric taken from a loom employing a very small take-up roll is stretched on the sides and bellies when laid on a table. Elimination of slipping by the increased bearing surface was mentioned as an advantage of the large roll.

It was remarked that a high sand roll gives better tension on the selvages and holds the cloth out better than a low roll. Particularly good results were said to be obtained on Celanese by using large rollers placed high and covered with crepe rubber. The overseer who offered this information was asked whether he had encountered any difficulty with the rubber decomposing and getting on the silk. He replied that he has not had such trouble in a year's operation. One overseer reported that a large high roll gives him an increased width of $\frac{1}{4}$ in. on fabric formerly run with the small, low roll; and another reported a gain of $\frac{1}{2}$ inch.

The advantages of the silk reed were next discussed. This reed was defined as being all-steel and solid across

the top and bottom. Durability was an advantage emphasized, it being stated that this reed could be "thrown down, dropped, or rolled anywhere without damage." Disadvantages mentioned included high cost and difficulty in repairing, it being usually necessary to return the reeds to the manufacturer for repairs unless the mill employs a man experienced in such work. One overseer, however, stated that the repair shop of his mill has had no difficulty in undertaking such work, and that this shop has even successfully repaired a silk reed through which a shuttle had been thrown.

To obtain full advantage from a silk reed, remarked one speaker, it is desirable that the loom be designed to employ it, since the reeds are made to slide from side to side, following the position of the warp as the warp papers come off, and thus preventing cut dents.

Elimination of warp streakiness and cloth waviness in light-weight top silk by the use of steel reeds was reported. Another speaker suggested that obtaining more dents per inch is the major advantage of this reed. Supporting the latter statement, an overseer remarked that a silk reed permits 75% air space, as compared with the 50% air space of the pitched reed. Another stated, however, that his pitched reeds have 65% air space.

Returning again to the subject of repairs, an overseer declared that his silk reeds are successfully repaired on the loom if the dents are not broken. Returning also to a discussion of air space, an overseer expressed the opinion that many men prefer to have a higher percentage of wire for the sake of strength. One mill, according to its representative, is fortunate to have its extremely fine pitched reeds last for two warps.

Motor Drive, Leases, and Shedding

In a discussion of the advantages of the motor drive for looms, it was pointed out that motor-driven looms require less fixing, run at more uniform speed, turn out cleaner merchandise, and increase production—in one case, 3%.

The overseers were asked to discuss the advisability of employing a "middle lease" in a silk or rayon warp, the term being defined as a lease between cut marks. A lease about every 120 or 150 yd. for use in the case of a smash or other trouble was recommended by one speaker. It was pointed out that many mills require three leases when employing machine twisting, two for the twisting and one about six or eight yards away for safety.

Retaining the size over night was mentioned as a likely cause of shedding in the loom. Such a practice was said to permit the starch to break down and a certain amount of evaporation to take place. The yarn is capable of taking only a certain amount of starch, it was remarked, the rest remaining on the outside of the yarn and becoming brittle. Other causes for shedding mentioned were tight harnesses and rough drop wires, the latter due to insufficient cleaning. A cause for "knitting" of yarn when cover is being sought was said to be a slack line in the top shed.

In discussing humidity in the weave shed, the chairman declared that a high humidity causes the belts to stick, resulting in the looms jumping. The opinion was expressed that the heat caused by motor-driven looms reduces the relative humidity in the weave shed, although one man stated that, with a room full of motors, he has no trouble in keeping his relative humidity up to 76%.

The question as to how many yards it is permissible to waste when starting a new piece of cloth was raised. A loss of about 64 yd. on 1,200 yd. was quoted as a glaring example of poor conditions. Another speaker reported that an investigation in one mill showed that the remnants were 2, 3, and 4 yd. in length; and this condition was corrected with benefit to the mill.

An overseer requested a discussion on the relative merits of yarn-wound squeeze rolls and flannel-covered rolls. The representative of one mill stated that he changed over to the yarn-wound rolls when running 5,100 ends of 15s yarn on two-cylinder, 70-ft. slashers, but that he was unable to obtain satisfactory production and therefore changed back to the flannel. Another declared that poor production on 40s yarn forced him also to discard the yarn-wound rolls. The trouble found with the yarn-wound rolls was said to be that they would not squeeze as they should. The yarn used by one of the speakers consisted of a strand of worsted and a strand of woolen. He reported that this did not make a ridgy surface.

To prevent the soiling of rayon or other fine yarns by the piecing up of broken ends with moist hands, it was recommended that a bag of French chalk be provided at each loom for the use of the weaver.

Southern Combed Yarn Mills to Cut Night Work

ANOTHER forward step toward stabilizing production and employment in the combed cotton yarn industry was taken at a general conference of sales yarn spinners at Gastonia, N. C., March 6, representing about 98% of the combed yarn spindles of the southern States producing for the gray yarn market. The elimination of all night operation in that branch of the industry was recommended and, after general discussion, the following resolution was adopted:

"Resolved, that the principle of putting this elimination policy into effect by night runners is recommended to start by running both day and night shifts in the day time, and that it look to the eventual incorporation of both shifts into a single day shift."

The original purpose of the meeting was to effect a general understanding of details involved in putting into effect the recommendation of The Cotton-Textile Institute, effective March 1, eliminating women and minors under 18 years of age from night employment in cotton mills. However, it soon developed that sentiment at the meeting was strongly in favor of abolishing night operations entirely.

Since early last summer the majority of combed yarn mills in the Gaston County area have been operating on a curtailed schedule of three days a week, day and night shifts, and their production for the first two months of 1931 amounted to only 48% of normal capacity. Average production of combed spinning mills will not be

(Continued on page 65)

Cotton Goods "Self-Discipline" Is Beginning to Reap a Reward

A LESSON and an inspiration might be taken from the action of cotton goods, mainly print cloths and broadcloths, during the last two months.

One of the largest sellers of cotton goods recently stated in its company organ: "Very few people outside of Worth Street realize the enormous business that has been done in cotton goods during the last few weeks." In the week ending Jan. 21, 1927, the year of the big cotton crop and low prices this concern sold 45,759,000 yd., which stood as its record until late in February, when one week's bookings ran up to 48,767,000 yd. This total was 340% of production of the mills involved. This firm also sold more goods in seven weeks of this year than in any seven in its history.

Called "Permanent Improvement"

The Association of Cotton Textile Merchants of New York in a recent statement analyzed the situation as follows:

"Evidence continues to pile up that a permanent improvement has manifested itself in the cotton textile industry. The time has passed when cotton goods can be had on a write-your-own-ticket basis.

"Buyers have been following a practice instituted some time ago of supplying their needs on a hand-to-mouth basis. For some months, when prices were registering new lows all along the line, they could hardly be blamed for wishing to avoid being caught with even a small stock on declining markets. In spite of optimistic opinions of worried manufacturers that prices would surely be stabilized at reasonable figures, the decline continued.

"Now, however, that situation has been reversed. The foundation for this change was laid in the summer of 1930, but it has manifested itself only within the last few weeks. It has been said that cotton textiles present at this time the strongest front of any major industry. The statement that they will take the lead in recovering from the current depression is based, not upon the enthusiasm of proponents, but on sound facts backed by statistics covering production, sales, shipments, stocks and unfilled orders.

"Some evidence has been adduced tending to prove that other industries have taken effective steps to curb ruinous overproduction, but cotton mill men generally have set an example of rigorous self-discipline in limiting production to demand which has not been equalled by other manufacturers.

"Briefly summarized the conditions which have added strength to the cotton textile industry are these: increased efficiency in manufacturing methods; lower production costs to meet the changed economic and competitive conditions; production brought into line with demand; and finally, a thorough liquidation of stocks.

"Of course decreased costs, no matter how skillfully achieved, would be ineffective if lack of demand brought about pyramiding of stocks. Sales, however, have increased satisfactorily. As a result prices in practically all groups are noticeably firmer. Sales during January were 118% of production, while stocks on hand showed a sharp decrease.

"The reports so far received covering sales in February tell an encouraging story of continued activity. Several of the largest houses in Worth Street have stated in their market letters that sales for the current year are the largest reported in any similar period and far in excess of actual production. These reports cover both gray and colored goods and there has been similar activity in fine and fancy goods. It seems somewhat of a paradox to speak of depressed conditions when recent reports are colored by such statements as these.

"Hand-to-mouth buying is an evolution of modern merchandising which to a degree will continue as a guiding principle among buyers. However, one has only to examine the bare shelves of distributing establishments to realize that this principle has been carried to unprofitable extremes and must be replaced by a more liberal attitude which takes into account increased consumer demand."

Print Cloth Volume Large

Within the last few days reports from cotton goods distributors indicated that within a 24-hour period about 10,000,000 yd. of two print cloth constructions had been sold, 38½ in. 64 x 60, 5.35 yd., and 39 in. 68 x 72, 4.75 yd.

The huge volume of sales indicates that most buyers waited until the last minute to cover their seasonal requirements. All came into the market at the same time for practically the same deliveries which were, of course, wanted quickly.

The movement gained momentum and the effect first felt by buyers was that they were unable to secure goods of the wanted descriptions when they had to have them. As soon as this knowledge became widespread acceleration was increased. Prices became stronger day by day, and many mills withdrew offerings for nearby shipments.

It was a condition which showed what reactions are possible if hand-to-mouth buying is followed too severely. Beneath all the surface indications of an extremely active market, was the unseen but powerful effect of elimination of night work for women and minors. Night work elimination renders it impossible to build up depleted stocks in as short a time as was formerly possible. The fruits of production control which had been unapparent previously are now coming to light. A second step in their industrial program is now possible. This step is the obtaining of prices which mean profit to the industry as a whole. Indications are that the large volume of business which has been seen in cotton goods since the first of the year and continued production control will quicken the trend toward more adequate profits.

Hart Plan Suggested as Uniform Method for Analysis of Sulfonated Oils

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ACCORDING to Government statistics, the amount of Turkey Red Oil consumed in this country during 1929 amounted to over 18,000,000 lb., valued at nearly $2,000,000. Hence, the commercial importance of properly evaluating and grading of Turkey Red Oil and other sulfonated oils is self-evident.

Several years ago the writer delivered a paper which covered an investigation by the Textile School of North Carolina State College of the various methods then in vogue for the analysis of sulfonated castor and other sulfonated oils. Subsequently this paper was published in the *American Dyestuff Reporter*.

The investigation consisted of comparing different methods for determination of total fatty matter according to directions furnished either by the oil manufacturer or by the ultimate consumer. It disclosed the fact that there were many methods in use, differing greatly in procedure and yielding highly discordant results. They could all be classified as follows: (a) volumetric, (b) gravimetric, and (c) extraction methods. In Table I, taken from the above article, the analyses of three samples of sulfonated oils by the various methods are given, from which the very large discrepancies in the results will be readily noticed.

Besides the uncertainty in the analysis of sulfonated oils, there seems to exist also considerable ambiguity as to their grading, often leading to embarrassments and disputes. For example, it is often assumed by the consumer that a 50% or a 75% oil actually represents 50% or 75% true fatty matter respectively; where as a matter of fact the former may not contain more than 41 to 43% and the other 64 to 67%, the difference being inorganic ingredients, glycerin, etc., some essential and others as impurities.

During the discussion of these tests, attention was called to the methods developed by R. Hart, originally outlined in the September, 1917, issue of the *Journal of Industrial and Engineering Chemistry*. About seven years ago these methods, with some modifications and after an investigation by oil committees for a period of two years, were adopted as official by the American Leather Chemists Association. It seems to the writer that it would be highly desirable for the textile chemists likewise to agree on some standard method for the analysis of sulfonated oils and thereby eliminate the present ambiguity and the widely differing results.

With this in mind, the author visited Mr. Hart this past summer and had him outline the latest developments of the methods as used by himself and the A.L.C.A., and is greatly indebted to him for his help and suggestions. An outline of the proposed method is shown in Table II.

System of Analysis

Organically combined sulfur trioxide — The new method—which, by the way, has the endorsement of K. H. Bauer, professor at the University of Leipzig, and an authority on oils and fats—depends on the decomposition of the sulfonated oil upon boiling with a definite amount of standardized sulfuric acid thus liberating the organically combined SO_3 and thereby increasing the acidity of the solution due to the liberated organically combined sulfur trioxide. The increase in acidity, which can readily be ascertained by analysis, was found to correspond quantitatively to the combined SO_3, and hence can be used to calculate the latter. The change that takes place upon boiling with acid is represented by the following equation:

$$2NaSO_3OC_{17}H_{32} \cdot CO_2Na + H_2SO_4 + 2H_2O = Na_2SO_4 + 2NaHSO_4 + 2HOC_{17}H_{32} \cdot CO_2H$$

That is, for every molecule of combined sulfur trioxide there is liberated one hydrogen equivalent of mineral acid. ($NaHSO_4$)

Procedure—Ten grams of the sample is weighed into a 300-c.c. Erlenmeyer flask provided with a reflux condenser and boiled for one hour with 25 c.c. of 1 N sulfuric acid, using glass beads to prevent bumping, and shaking frequently. The condenser is washed into the flask, 30 grams granulated salt and 100 c.c. of water are added, and the mixture is cooled; 20 c.c. ether and methyl orange indicator are now added, and the contents are titrated with N/2 caustic soda.

The purpose of the salt and ether is to overcome the occasional difficulty of titrating a milky or turbid solution, for the ether extracts the fat, and the salt solution causes a rapid separation of the layers, enabling the titration to be carried out in the lower water layer which is clear.

TABLE I—TOTAL PER CENT FATTY MATTER IN SULFONATED OIL BY VARIOUS METHODS

	Method Number	Sample Number 1	Sample Number 2	Sample Number 3
A. Volumetric:	7	43.5	67.3	43.5
	13	53.4	76.7	51.7
	27	55.0	85.0	65.0
B. Gravimetric:	5	38.6	61.9	43.5
	2	39.1	60.6	42.7
	6	40.0	60.2	43.9
C. Extraction:	10	38.0	57.7	39.6
	11	39.2	59.8	41.4
	17	41.5	59.9	42.6

TABLE II. OUTLINE OF THE HART (A.L.C.A.) METHOD FOR THE ANALYSIS OF SULFONATED OILS

1. Combined sulfur trioxide.
2. Water.
3. Alkalinities:
   (a) Total alkalinity.
   (b) Fixed alkalinity.
   (c) Alkalinity of total ammonia.
   (d) Alkalinity of ammonia as soap.
4. Acidities:
   (a) Free acidity plus acidity of ammonia soap.
   (b) Free acidity.
5. Saponifications:
   (a) Saponification value of sample.
   (b) Saponification value of total fatty matter.
   (c) Neutral-fat number of sample.
6. Inorganic Constituents:
   (a) Neutralized combined sulfur trioxide.
   (b) Ammonia as soap.
   (c) Sodium as soap.
   (d) Ash.
   (e) Inorganic impurities.
7. Fatty Matter:
   (a) Fatty acids as soda soap.
   (b) Fatty acids as ammonia soap.
   (c) Free Fatty acids.
   (d) Neutral fat.
   (e) Total fatty matter by saponification.
   (f) Unsaponifiable.
   (g) Total fatty matter by difference.

The organically combined SO_3 is then calculated according to the following formula, the derivation of which is given in the original article published in the *Journal of Industrial and Engineering Chemistry*. (All titres and titrations in the paper are in mg. KOH per gram, unless stated otherwise.)

1. Combined SO_3, per cent =

$$\left[\frac{\text{(c.c. NaOH} \times \text{Titre NaOH} - 25 \times \text{Titre } H_2SO_4) + A}{\text{Sample}}\right]\frac{8}{56.1}$$

Where A = total alkalinity (see Formula 3a below).

Example: Combined SO_3 =

$$\left[\frac{(45.5 \times 27.6 - 25 \times 56.3)}{10.1} + 44.7\right]\frac{8}{56.1} = 4.23\%$$

Water—The method for determining water is taken from the official methods of the A.L.C.A.

Procedure—Weigh between 30 to 40 grams of the sample (depending upon the amount of water present) into a flask of 250 to 300 c.c. capacity and add 75 c.c. water-saturated xylol, prepared by heating a mixture of water and xylol with frequent shaking and subsequently removing the water in a separatory funnel. Connect to a condenser and place flask in a bath of paraffin or heavy lubricating oil. Distill moderately until the distillate comes clear. Collect distillate in a tube graduated to 1/10 c.c. and wash out the condenser with xylol, collecting washings in the receiver also. Place graduated receiver in hot water and when the distillate is clear, cool. The percentage of moisture is obtained by dividing the cubic centimeters of water in the distillate by the grams of oil taken. (Bidwell and Sterling moisture apparatus manufactured by Eimer & Amend may be used for this test.)

2. Water, per cent = $\frac{\text{c.c. } H_2O}{\text{Sample}} \times 100$

Example: Water = $\frac{5.40 \times 100}{21.0} = 25.7\%$

Total alkalinity—This test measures the amount of fatty acids bound as soap and is made by titrating a water solution of the oil in presence of methyl orange.

Procedure—Ten grams of the oil in an Erlenmeyer flask is dissolved in 100 c.c. of water and the solution titrated with N/2 H_2SO_4. As before, the end-point may be made more distinct with salt and ether. The formula is as follows:

3a. Total alkalinity (A), mg. KOH per gram =

$$\frac{\text{c.c. } H_2SO_4 \times \text{Titre } H_2SO_4}{\text{Sample}}$$

Example: Total alkalinity = $\frac{15.9 \times 28.1}{10}$

= 44.7 mg. KOH per gram

Fixed alkalinity—This determination corresponds to the fat bound as soda or potash soap and in the absence of ammonia is identical with total alkalinity. In the presence of ammonia, however, a separate determination is necessary. The ammonia is first removed by boiling with a definite amount of standardized caustic soda and the excess alkali is then titrated with acid.

Procedure—Ten grams of oil is dissolved in 100 c.c. of water in a 500-c.c. beaker, 25 c.c. of N/2 NaOH added, and the solution gently boiled until wet litmus paper no longer indicates ammonia. It is finally titrated with N/2 sulfuric acid in the presence of methyl orange. From this data, the fixed alkalinity is calculated as follows:

3b. Fixed alkalinity, mg. KOH per gram =

$$\frac{\text{(c.c. } H_2SO_4 \times \text{Titre } H_2SO_4) - (25 \times \text{Titre NaOH})}{\text{Sample}}$$

Example: Fixed alkalinity = $\frac{(23.0 \times 28.1) - (25 \times 27.6)}{10.1}$

= — 4.33 mg. KOH per gram

In case the oil has been neutralized with ammonia only, it evidently will contain no fixed alkali and the result is therefore zero. Moreover part of the organically combined SO_3 may also be neutralized with ammonia, causing upon boiling with the caustic an absorption of the latter that cannot be titrated. In that case the fixed alkali is negative. The sign, however, is automatically taken care of by the above formula and it should be carefully retained for use in subsequent calculations.

Alkalinity of total ammonia—This evidently is the difference between the preceding two determinations, hence

3c. Alkalinity of total ammonia, mg. KOH per gram = Formula 3a-Formula 3b.

Example: Alkalinity of total ammonia ⇆ 44.7 — (—4.33) = 49.03 mg. KOH per gram.

Alkalinity of ammonia as soap—Usually the ammonia bound as soap is the same as total ammonia, but in the case of a negative fixed alkalinity, it is evidently less. The following two formulas cover all cases:

3d. Alkalinity of ammonia as soap (when fixed alkalinity is positive), mg. KOH per gram = Formula 3c.

3d'. Alkalinity of ammonia as soap (when fixed alkalinity is negative), mg. KOH per gram = Formula 3a.

Example: Alkalinity of ammonia as soap = 44.7 mg. KOH per gram.

Free acidity plus acidity of ammonia soap—This determination is made by titrating with alkali a sample of the oil dissolved in alcohol. It represents the free fatty acids plus fatty acids as ammonia soap.

Procedure—Ten grams of the sample is dissolved in 75 c.c. of neutral alcohol in a beaker and is titrated with N/2 NaOH until pink to phenolphthalein. It is then gently boiled until no more ammonia escapes, cooled and the titration continued to a pink end-point. This process is repeated until a permanent end-point is reached.

4a. Free acidity plus acidity of ammonia soap, mg. KOH per gram

$$= \frac{\text{c.c. NaOH} \times \text{Titre NaOH}}{\text{Sample}}$$

Example: Free acidity plus acidity of ammonia soap =

$$\frac{26.2 \times 27.6}{10.0} = 72.3 \text{ mg. KOH per gram.}$$

Free acidity—This corresponds to the free fatty acids only, and in the absence of ammonia is identical with the immediately preceding determination. In the presence of ammonia, however, allowance must be made for the acidity due to the ammonia-soap. The formulas covering all cases are as follows:

4b. Free acidity (in the absence of ammonia), mg. KOH per gram = Formula 4a.

4b'. Free acidity (in the presence of ammonia), mg. KOH per gram = Formula 4a — Formula 3d or 3d'.

Example: Free acidity = 72.3 — 44.7 = 27.6 mg. KOH per gram.

Saponification value of sample—This test consists of determining the part of the fatty matter in the sample which will react with excess alcoholic caustic upon boiling, and represents all the fat with the exception of fixed-alkali soap and unsaponifiable. The saponification value is determined in the usual way.

Procedure—About 3 grams of oil is heated for 45 min. with 25 c.c. N/2 alcoholic potash in a Erlenmeyer flask provided with a reflux condenser. Excess alkali is then titrated back with N/2 H_2SO_4 in the presence of phenolphthalein. The strength of the alcoholic potash is determined by a blank titration. The calculation is as follows:

5a. Saponification value of sample, mg. KOH per gram = $\frac{\text{(c.c. } H_2SO_4 \text{ of Blank} - \text{c.c. } H_2SO_4 \text{ of Sample)} \times \text{Titre } H_2SO_4}{\text{Sample}}$

Example: Saponification value of sample = $\frac{(25.7 - 12.6)\ 28.1}{2.87}$ = 128.3 mg. KOH per gram.

Saponification value of total fatty matter—This is simply the sum of the previous determination and of fixed alkalinity.

5b. Saponification value of total fatty matter, mg. KOH per gram = Formula 5a + Formula 3b.

Example: Saponification value of total fatty matter = 128.3 + (—4.33) = 123.97 mg. KOH per gram.

Neutral-fat number of sample—This number includes glycerides, lactones, fatty anhydrides, and other saponifiable fats which require excess alkali for saponification. It is readily calculated by the following two formulas:

5c. Neutral-fat number of sample (when fixed alkalinity is positive), mg. KOH per gram = Formula 5a — Formula 4a.

5c′. Neutral-fat number of sample (when fixed alkalinity is negative), mg. KOH per gram = Formula 5a + Formula 3b —Formula 4a.

Example: Neutral-fat number of sample = 128.3 + (—4.33) — 72.3 = 51.7 mg. KOH per gram.

Inorganic constituents—The inorganic constituents are converted, mostly by calculations, to the form in which they probably existed in the sulfonated oil. The calculations are as follows:

6a. Neutralized organically combined SO_3, per cent = 1.49 × Formula 1.

Example: Neutralized organically combined SO_3 = 1.49 × 4.23 = 6.30%.

6b. Ammonia as soap, per cent = 0.0322 × Formula 3d or 3d′.

Example: Ammonia as soap = 0.0322 × 44.7 = 1.44%.

6c. Sodium as soap, per cent = 0.041 × Formula 3b.

Example: Sodium as soap—Since fixed alkalinity is negative there can be no soda soap present.

Ash—This determination is necessary in order to find the inorganic impurities and is carried out according to the A.L.C.A. official method.

Procedure—Weigh a convenient quantity (from 5 to 10 grams) into a crucible or dish. Ignite gently, allow the oil to burn, and complete the incineration at a dull red heat until all carbon is consumed.

6d. Ash, per cent = $\frac{\text{Weight Ash}}{\text{Sample}} \times 100$

Example: Ash = $\frac{0.208}{5.2} \times 100 = 4.0\%$.

Inorganic impurities—There are two cases to consider:

6e. Inorganic impurities (when fixed alkalinity minus 7 × Formula 1 is negative), per cent = Formula 6d — 0.1268 (7 × Formula 1 + Formula 3b).

Example: Inorganic impurities = 4 — 0.1268 [7 × 4.23 + (—4.33)] = 0.79%.

6e′. Inorganic impurities (when fixed alkalinity minus 7 × Formula 1 is positive), per cent = Formula 6d — 0.0946 (11.77 × Formula 1 + Formula 3b).

Fatty matter—With the exception of unsaponifiable and total fatty matter by difference, the various constituents of the fatty matter in the sample may be calculated approximately from their saponification equivalents in mg. KOH and the following factors: For castor oil fatty acids, 1.9; for castor oil neutral fats, 1.8; for all other fatty acids, 2.0; for all other neutral fats, 1.9; for mixed fatty acids, 1.87; and for mixed neutral fats, 1.93.

7a. Fatty acids as soda soap, approximate per cent = $\frac{\text{Formula 3b}}{\text{1.9 or 2.0}}$

Example: Fatty acids as soda soap = 0.0 (see 6c. above).

7b. Fatty acids as ammonia soap, approximate per cent = $\frac{\text{Formula 3d or 3d′}}{\text{1.9 or 2.0}}$

Example: Fatty acids as ammonia soap = $\frac{44.7}{1.9}$ = 23.6% approximately.

7c. Free fatty acids, approximate per cent = $\frac{\text{Formula 4b or 4b′}}{\text{1.9 or 2.0}}$

Example: Free fatty acids = $\frac{27.6}{1.9}$ = 14.5% approximately.

7d. Neutral fat, approximate per cent = $\frac{\text{Formula 5c or 5c′}}{\text{1.8 or 1.9}}$

Example: Neutral fat = $\frac{51.7}{1.8}$ = 28.5% approximately.

7e. Total fatty matter, approximate per cent = $\frac{\text{Formula 5b}}{\text{1.87 or 1.93}}$

Example: Total fatty matter = $\frac{123.97}{1.87}$ = 66.2% approx.

TABLE III—ANALYSIS OF SAMPLE OF SULFONATED CASTOR OIL

	Per Cent
Total fatty matter	65.1*
(1) Fatty matter as free fatty acids, approximate	14.5
(2) Fatty matter as soda soap, approximate	0.0
(3) Fatty matter as ammonia soap, approximate	23.6
(4) Fatty matter as neutral fat, approximate	28.5
Unsaponifiable	0.66
Volatile	25.7
Organically combined SO_3	4.23
Inorganic impurities	0.79
Ammonia	1.44

* Compared with 66.2% by saponification method.

Unsaponifiable—This is determined according to the A.L.C.A. method as follows:

Procedure—Weigh approximately 10 grams of the oil into a 250-c.c. Erlenmeyer flask and add 50 c.c. of an approximately 1 N alcoholic KOH solution. Boil one hour under reflux condenser and cool. Add 40 c.c. water and transfer to a separatory funnel. Shake at least three times with petroleum ether (Boiling Point 40 to 75° C.) using 50 c.c. each time. Wash ether extract at least three times, first washing to be with slightly alkaline 50% alcohol and the following washings with distilled water. Evaporate ether extract in a tared vessel, dry, cool, and weigh.

7f. Unsaponifiable, per cent = $\frac{\text{Weight Unsaponifiable} \times 100}{\text{Sample}}$

Example: Unsaponifiable = $\frac{0.066}{10} \times 100 = 0.66\%$.

Total fatty matter by difference—This is the official A.L.C.A. method for total fatty matter and is determined by subtracting from 100 all the other ingredients contained in the sulfonated oil.

7g. Total fatty matter per cent = 100 — (Formula 2 + Formula 6a + Formula 6b + Formula 6c + Formula 6e or 6e′

Example: Total fatty matter = 100 — (25.7 + 6.30 + 1.44 + (0.79 + 0.66) = 65.1%.

The final report on the analysis of the oil used for illustration is shown in Table III.

Partial Bibliography

The Analysis of Sulfated Oils, R. Hart, *J. Ind. Eng. Chem.* vol. 9, p. 850-2 (1917).

(*Continued on page 69*)

Why Bearings Get Hot

By W. F. Schaphorst, M. E.

IT IS commonly believed that bearings heat because of insufficient lubrication. To be sure, lack of lubricant is a bad thing, and will invariably cause heat, but that is not *always* the cause of heating.

Let us step back a short distance and take a look at lubricants and lubricating from other angles.

The writer has known of many instances where lubricants have been purchased because of low price. Often the purchaser soon discovers that his bearings run hot and that much money is lost in the shape of power required to overcome the additonal friction, plus the cost of the more rapid wear of the machine parts.

For example, I have in mind an oil which costs twice as much as any other oil sold for the same purpose, yet the more expensive oil, as regards first cost, will last three or four times as long as cheaper oils. The high-grade oil requires less power, and with reduced friction, there is less wear and tear on the machinery. Money is saved all around. Mere *quantity* is not always the most important factor.

Clearance is important. If the clearance in the bearing is either too large or too small, the bearing will heat. When clearance is too great, there is greater pressure per square inch between the metal parts that make contact or that almost make contact, and as a result heating will occur. A shaft that is too small is liable to cut through the oil film because of this greater pressure. As soon as the film is cut, and we have true metal-to-metal contact, wear becomes rapid, and a "hot box" may result.

On the other hand if clearance is too small the bearing will bind. If the fit is so close that room for lubricant does not exist, it is clear that friction will be great. Then, the greater the friction the greater the heating. With rise in temperature, the shaft swells. Friction may increase until the shaft will not turn at all, regardless of the driving power.

Next comes alignment. If we have several rigid bearings in a row with a shaft through them, and if the bearings are not in perfect alignment, the shaft will press more intensely against the edges of the bearings than elsewhere. The lubricating film very likely will be broken, and heating will result. Even if the bearings are self-aligning, there will be greater pressure between the shaft and bearings than where alignment is correct. Whether the bearings are plain, ball, roller, rigid, or self-aligning, they should always be in true alignment.

And then there is dirt. Everybody knows, or should know, that regardless of the kind of oil used, bearings must always be kept clean. The highest priced oil obtainable will not and cannot offset the harm that will be done by dirt. Be sure that the oil applied to any machine is perfectly clean and free from foreign matter, especially grit.

POINTERS ON PATENTS . . .

Patent Protection

UNDOUBTEDLY the best way to protect an invention is by means of a patent. A patent is a grant by the government to a person of the use of the courts to prevent others from making, using, and selling the invention covered thereby. It is no more and no less.

The term of a patent in this country is 17 years, and during this period the patentee has the right to exclude every one from practicing the thing patented, without his permission. If he sees fit, he may reserve to himself the exclusive use of his invention or transfer the right to another. But he is neither bound to use his discovery himself; nor permit others to use it. The only hope that the public has that an inventor will use or license his invention is the expectation that the patentee's interest will induce him to do so.

In many cases the invention is merely an improvement on some unexpired dominating patent. In such case the second inventor cannot use his improvement until the dominating patent expires, but he can prevent the owner of the dominating patent from using the improvement. In other cases the invention is of little value unless used in conjunction with an invention owned by another. Under these circumstances it is for the best interests of both patentees to adopt a policy of exchanging licenses. This strengthens both patents by the admision of validity and puts them to work over as large a field as possible. Two competitors may in this way strengthen their relative position against third parties.

It must be borne in mind that the monopoly of a patent begins when the patent is finally issued and not when the application is filed. Hence, an inventor ordinarily does not have any protection against infringers during the pendency of the application. And this is so, even if the inventor notifies infringers that he has an application pending either by letter or by marking his device "Patent Applied For."

If the infringing device, however, is made in a foreign country and shipped into this country in direct competition with that of the inventor, proper relief may sometimes be obtained by appealing to the Tariff Commission, in Washington, even before the patent is granted.

This article is based on Bulletin No. 3 of the Patents Committee of the Technical Association of the Pulp and Paper Industry and is presented to readers of TEXTILE WORLD *through the courtesy of this committee.*

Overseers' Round-Table

THIS department offers a new subject for discussion each week and gives readers' comments on problems introduced during previous weeks. The subject which was opened four weeks ago is closed this week and a summary of contributed ideas is given on opposite page

◆

Choosing Second Hands

Editor, Overseers' Round-Table:

My experience, and observation, has been that quite a lot of trouble is caused where overseers are allowed to hire their second hands. Regardless of how fair the overseer may be there are always some disgruntled employees who will accuse him of showing partiality.

If the overseer has a good man in mind he should recommend him to the superintendent but for the best interest of all concerned let the super do the hiring. M.K.

Editor, Overseers' Round-Table:

I do not think that either the superintendent or the overseer should appoint a second hand without discussing it thoroughly with the other. A second hand appointed by the super could make it very disagreeable for the overseer. Also, a second hand appointed by the overseer could get by with a lot of things he couldn't otherwise.

For cooperation and harmony I think the superintendent and the overseer should get together on appointing second hands. T.A.S.

Editor, Overseers' Round-Table:

The superintendent should be the one to promote an assistant foreman. The foreman's suggestions and recommendations, however, should be weighed carefully and given due consideration.

Regardless of how unselfish, impartial, and conscientious a foreman may be, he is susceptible to mistakes. To err in this matter means worry, heart-aches, and also rancor and ill feeling among the operatives. To promote one who is incapable, undeserving, or who is a professionally "yes" man has a tendency to destroy ambition among the workers and lowers respect for the superior.

The super can choose from a broader perspective. He can see and understand real merit and allegiance.

"Incognito"

Editor, Overseers' Round-Table:

I believe the overseer should have the privilege of choosing his own second hand. The overseer is in close touch with his help at all times and knows the best points and traits of each. There are lots of operatives who make it a point to be very busy when the super is around, but at other times they do only enough to get by. The super may think these are the proper ones to advance, but the overseer knows that there are others more deserving.

I believe that, when there is a promotion to be made, the super and overseer should get together and, by going over the traits of those capable of advancement, decide the one most worthy. G. W. Sheeley

Editor, Overseers' Round-Table:

If the super hires all the help in the mill he should be the one to choose the second hands in all departments, with the understanding, of course, that the overseer is to be in full charge, the same as with all other employees of the department.

If, on the other hand, the overseer hires his own help, then he should choose his assistant, with the assent of the

Membership on Safety

"YOU all know," Superintendent Chase started things off, "how important it is, both from the humanitarian and economic standpoints, to avoid accidents. An excellent way to help along these lines is to have a safety committee in the plant. A point which I have been wondering about, however, is the make-up of the committee. Do you think that membership should be confined to certain overseers and representatives of the management, or should the operatives also be represented?"

"I don't think that any of the operatives should serve on the committee," Bill spoke up, "because little good would result and there might be some harm. In the first place the average operator placed on such a committee would get all swelled up with pride and would try and find so many places to spend money that it would be a joke. When you come right down to it, there is the possibility of danger in most everything you do—folks have been known to get hurt by falling out of bed when asleep. For this reason you have to use some sense in deciding where it is necessary to spend money to improve safety conditions. I was on a plant safety committee once where one of the women operatives was a member. Well, that woman ran us all ragged. She could think of more fool things in five minutes than anyone I ever saw and, as a result, the rest of us lost interest and the committee didn't do much good. Operatives have not had broad enough experience to pick out real danger points and they have no idea of how much money it costs to make changes."

"As a last point," Bill continued, "I'd like to ask you how you would go about picking operatives for the committee. I can just imagine how much jealousy and how many cries of 'teacher's pet' there would be, for everyone would like to be able to knock off work every so often and wander through the plant with the committee crabbing things."

"If Bill would stop and think for a minute,"

Committees

Pete took the other side, "he would realize that all these safety measures are really for the benefit of the workers and it seems ridiculous to me not to have the workers represented. They are the ones who are exposed to danger and they are the ones who can best say how to avoid danger. The old idea that the operatives haven't much sense and that someone else has to do their thinking for them is foolish. I agree with Bill that it wouldn't be wise to have anyone on the committee who didn't have good sense, but there are plenty of operatives who think soundly and it wouldn't be difficult to find them. I think representatives of the management, overseers and operatives should all be on the committee. The committee has many duties to perform, such as running campaigns, teaching less dangerous ways to do jobs, recommending guards and safety devices, etc., and I think that all classes in the plant should be represented. If you don't have operatives on the committee the workers don't feel that the committee is really working for them."

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Do *you* think that operatives should be represented on the plant safety committee?

Overseers and others are invited to discuss this and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable.

super. Under all circumstances let the super know every second hand personally, because he is the one responsible for work in the mill.

J. MAUER
Princeton Rayons, Inc.

Intoxicated Workers

Editor, Overseers' Round-Table:

IF JOHN SMITH enjoys a drink, let him drink, but neither intoxication nor liquor has any place in the plant. Under no circumstances should a person whose brain is befuddled with drink be allowed to attempt to perform his duties in the mill. Poor quality of work and possible accidents will be the result.

Intoxication is usually regarded as a joke by onlookers, so the man's fellow workers would be kidding him, and laughing, and little work would be done in the department, so the best plan would be to send the man home for at least a day. An habitual drinker is usually a careless worker and there would probably be other reasons for discharging him, but, as a believer in tolerance and a certain amount of personal liberty, I don't think a worker should be severely punished for drinking alone.

W. F. P.

Current Business Conditions

Editor, Overseers' Round-Table:

WHY CALL it the current condition of textiles? Conditions are only a little worse at this time than they have been in the last dozen years. In this period there has never been a real boom and there seems to be to be many reasons why textiles cannot prosper under present conditions.

In the first place it is an age-old industry, so set in its ways that it is slow to accept modern improvements, efficient methods and scientific study. It is one of the most skillful trades in existence, yet its operatives are, perhaps, the poorest paid of all. And, by the way, many manufacturers are quick to take advantage of the depression to slash wages further.

Like every other industry, overproduction and cut-throat selling have had a bad effect, yet conditions along this line are getting worse rather than better. Manufacturers rush orders through with day and night forces in the hope of beating someone else out. When things slow up the owners can sit back in ease while the employees have to idle in distress.

Much of the blame can also be laid to the selling end. I believe that better advertising, forceful branding and greater specializing will go far towards improving the industry and forcing out the manufacturers of inferior products.

W.F.P.

Editor, Overseers' Round-Table:

THE TROUBLE with the textile industry is old ideas and overhead expenses. The cotton mill has to hold out for a big price to overcome the waste of money.

What the mills need is to reorganize, combine more small departments under one head and get rid of the old ideas. We all know that a cotton mill cannot be run today as it could be ten years ago. Notice the mills which have reorganized with new ideas and see if they are not running.

STUDENT

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Summary of Discussion on Choosing Second Hands

Opinion on whether the super or the overseer should appoint second hands illustrated once more the tendency towards cooperation as the best method of settlement. Only 13 of the contributions came out flatly in favor of the overseer, and 7% flatly in favor of the super. Consultation with the super, but with the overseer having the main authority to appoint was favored by 27%, while 19% believed that the super should make the choice after talking things over with the overseer. The remaining letters, namely 34%, believed that the super and overseer should sit down together and make a joint decision.

Questions and Answers

We undertake to answer, free of charge, to the best of our ability, questions pertaining to textile matters received from any regular subscriber to TEXTILE WORLD. We do not undertake, however, routine analysis of yarn or fabric, or investigation involving unusual expense.

Inquiries should give the fullest information and data possible. In the case of damage to material, a sample should be sent. All inquiries must be accompanied by the name of the person inquiring, not for publication, but as evidence of good faith.

Letters expressing opinions or voicing criticism are cordially invited. These will be signed by the correspondent's name unless the letter itself contains a request that the name be withheld.

—EDITOR.

Reversing Cotton-Card Flats

Technical Editor:

I have read over the article entitled "Effect of Reversing Direction of Flats on Cotton Cards," in your issue of Feb. 21, three times and have come to the conclusion that Mr. Schaellibaum is taking considerable for granted.

Many concerns have experimented with the revolving of flats on cotton cards in the opposite direction to the normal. The subject was once studied scientifically and along practical lines by a prominent research organization and the conclusions drawn were that the flat strips, when running backward, consisted of more long fiber, contained more neps (this of course was a matter of opinion), and even more imbedded. The card produced neither stronger nor cleaner yarn. These tests were conducted on middling cotton. It must be noted at this point that it is more difficult to remove the flat strips when the flats revolve backward.

The best product will be obtained only when the individual in charge realizes what high speed and low speed actually do under several conditions. If the flats are speeded to any appreciable extent the weight of the sliver decreases. In order to increase this weight, the draft gear is changed, which means that more stock has to be fed to the licker-in. This counteracts to some extent whatever good has been done by speeding up the flats.

In my experience around the card I have noticed that as the flats come off or from the cylinder at the front (flats revolving normally) they are loaded with good fiber at the base of the wire, or near the clothing foundation, whereas the top appears to have the most trash—leaf, stalk, bolls, seed, etc. From this it would seem that the flats load at the back with good fiber, and the fiber in turn tends to hold the trash.

Now let us reverse the direction of the flats. It would be correct to surmise that the flats as they go in backward would load with good fiber, and as they reach the back would receive a forced load, due to the fact that the licker-in is relieving itself of its load, which consists of more dirt than near the front plate of the card. This is almost checked by the fact that flat strips are heavier when the flats are revolved in the opposite direction, in which case they come off at the back plate instead of at the front plate. Judging from the samples of strips taken by the writer from cards with flats running normally and from cards with flats running in the reverse direction, the strips are grayer in color from the reversed flats, possibly due to a forced loading at the back of the card.

Referring to Mr. Schaellibaum's statement that card clothing can do good work only as long as it is fairly clean, licker-in speeds have more to do with this than one would suspect. For instance, take two competitive mills with which the writer is familiar—one mill strips three times a day and the other once. The reason why one strips more than the other lies in a difference in licker-in speeds.

When heavy production is desired, more cleaning should be done previous to the carding. In the average mill today the cards are doing practically twice as much as any of the opening and picking machines—that is, on fly, drops, etc. Why speed up the flats and make more waste?

With reference to the last complete paragraph on page 33, which I take it is the final paragraph of Mr. Schaellibaum's article, it is not that machine builders do not want such a card, for they all desire to make a change which will cut mill costs or improve the product, but they are not inclined to pick up something which will not prove satisfactory. Neither will they adopt something as standard equipment just because a few desire it. Of course, this is true of any manufacturer.

T. L. JOHNSON

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Striped Effect in Circular Silk Hosiery

Technical Editor:

Enclosed you will find two stockings knit on the 300-needle circular machine, the body of which is composed of two ends of four-thread tram, knit in the gum and dyed.

You will note that there is a shaded or striped effect in the fabric in the tightly knit portion extending from the heel upward about 7 in. Will you please examine this stocking and advise if possible what, in your opinion, is the reason for this effect? (7467)

Examination shows that the shaded or striped lines referred to extend the full length of the stocking. As is always the case, the tight ankle portion shows up the defect more clearly than the more loosely knit leg.

The trouble is due to the two ends of silk dyeing differently. This might be caused by a difference in the amount of twist in the two silks, or it could be due to the use of two different lots of silk. Different lots are likely to have different affinities for the dyes. Any attempt to knit two separate ends of silk together in this manner is likely to prove unsatisfactory. In the event there is no dyeing trouble, the texture of the fabric is never so smooth and uniform as when a single-end thread is used. The same tension could never be obtained from both of the two cones; and in knitting,

one thread will be first on top, then underneath, and then at the side. This is bound to produce a crepy effect in the fabric. There are many disadvantages to the two-end knitting, and practically no advantages. We believe you would profit by adopting the single-end thread.

◆

Cross Marks in Dyed Silk Fabric

Technical Editor:

We are sending herewith two yards of blue silk. Can you tell us anything about the cross-marks and warp streaks in this cloth? (7470)

Streaks and marks of this character are frequently seen on weighted silk goods. They are invisible until the goods are dyed, and sometimes do not show until they are on the frames. It is a fact that few dyers will admit that tin weighting is seldom absolutely uniform, due to the mechanical appliances used in the washing and phosphating operations, which tend to streak the goods as well as to accentuate all weaving defects.

If the general run of acid dyes and the ordinary direct dyes are used, these streaks will show plainly on the finished goods, but if care is taken to select only such dyes as will give equal shades on pure-dyed and weighted silk, the slight inequalities in the weighting will not show. Since there is no complete line of colors for this purpose, the dyer will have to do a bit of research to find just what he needs. It is evident in this case that the use of a certain violet, which is noted for the way it changes shade in artificial light, has a great deal to do with the uncertain color of these goods. Wherever there is a tendency for the color to show fluorescence or dichroism, every defect in the fabric will be magnified, whereas if a solid-dyeing color is used, the fabric may pass inspection.

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Cotton and Rayon Felt

Technical Editor:

I am attaching a piece of felt made of cotton and rayon fibers. I understand that the felting process differs when rayon is used, and wonder if you could possibly give us some information as to how the attached sample of felt was made. (7494)

The sample submitted undoubtedly contains enough wool to give it the felting action noted. A burning test will convince you of that. As little as 10% or even 8% of wool will be sufficient, but there has got to be some wool present to get any felting action. You will note the sample is very soft.

Felt of this kind would be made by laying down a mix of cotton, rayon, and wool in alternate layers on the mixing floor, putting the mix through the mixing picker, preferably twice, and blowing it to the stock bin. From here it would go through the usual carding processes, which consist of a breaker card and a finisher card. The product of the first card is fed to the finisher card by means of an Apperly feed. All of this is carried out to give the very thorough mixing necessary where the wool content is so low. It is probable that material like this is laid up on a cross-former; that is, the web from one of the finisher cards is fed onto a traveling apron and the web from the other finisher card is superimposed on top of the first web in diagonal sheets running at about 60° angles to the travel of the apron.

The bats are taken from the former and put through the hardening machine, and care must be used not to cut the surface by too great a stroke. It is customary to run goods containing so much cotton with considerably wetter aprons than is the case with all-wool goods. Only very slight fulling is needed; and either a very light soap, just plain hot water, or possibly 1% solution of sulfuric acid will do the work equally effectively. A light scour, drying, trimming, and pressing complete the operations.

While no analysis has been made of the sample, it is possible that the two outer layers have a larger percentage of wool than the fill in order to get a smoother and tougher surface.

THOUSANDS of inquiries are handled annually by the Technical Editors. In order that as many readers as possible may benefit from this service, we select problems of general interest for publication each week.

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Direction of Narrow-Fabric Shuttle for Face and Back Picks

Technical Editor:

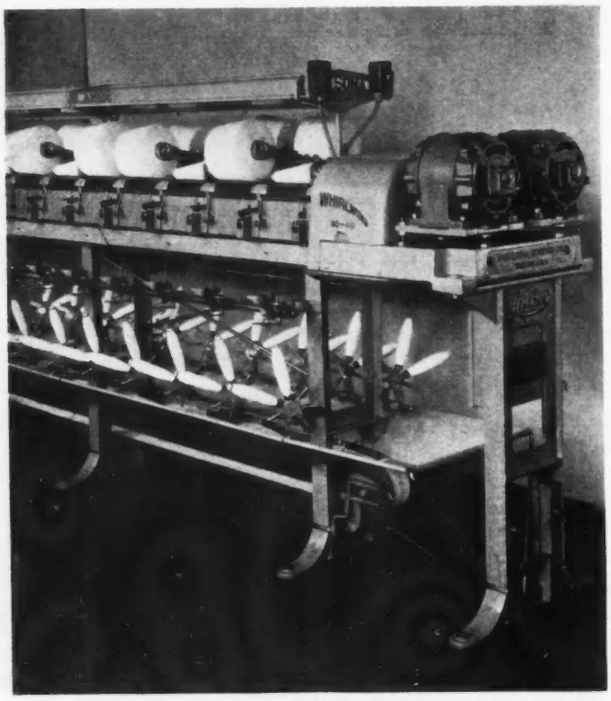
In an article printed recently in the TEXTILE WORLD, *written by Mr. Gibbons, we notice that he specifically states that the face of the narrow fabric should always be made with the shuttle moving from right to left. We are wondering whether you could give us any information as to whether this would apply when you are making a narrow fabric face down. In other words, looking at the web as running in the loom, the face of the web is on the underside and not on the top side, as is the usual case. (7474)*

We have submitted your inquiry to Mr. Gibbons, who replies as follows:

"In the original article the statement was made that the direction in which the shuttle should enter the shed in forming the face picks in a narrow fabric depends upon the direction of twist in the filling. In regular single-strand rayon, in which the spirals of twist are upwards and to the left, for best results (greatest covering capacity) the shuttle should pass from right to left in inserting the face picks, and return on the back picks. In other words, face and back picks considered, the filling should be inserted in a counter-clockwise direction. If the material is woven face down, the filling should still be inserted in counter-clockwise direction provided that the spirals of twist in the filling yarn are upwards and to the left.

"With filling yarns in which the spirals of twist are upwards and to the right, the filling should be inserted in clockwise direction regardless of whether the material is woven face up or face down."

New Machinery & Processes



Improvel high-speed winder with novel traverse mechanism

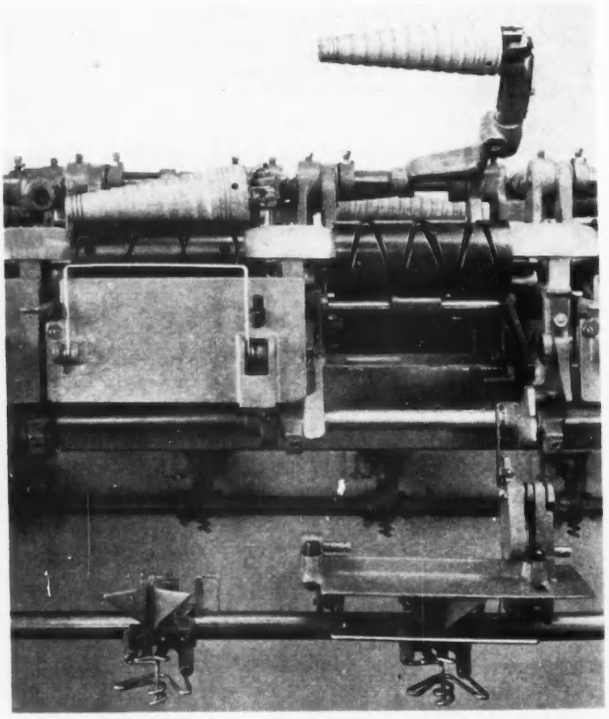
High-Speed Rotary-Traverse Winder Has No Reciprocating Parts

THE No. 40 high-speed, rotary-traverse winder, originally exhibited last spring at the Boston show, has been under constant study since its first appearance. The Universal Winding Co., Boston, Mass., now announces that the machine has given gratifying results in mill tests and is ready for general distribution.

The No. 40 winder is adapted for winding either cones or tubes, and is particularly distinguished by the fact that it has no reciprocating parts for traversing the yarn lengthwise of the package. It is stated that, as a result of this arrangement, there is no perceptible friction or strain imposed on the yarn by the traversing means, and it is possible, therefore, to run the machine at exceptionally high speeds.

An important feature of the traverse roll lies in the construction and arrangement of the grooves at the crossings to insure that the yarn will be guided from one end of the package to the other and back again without being diverted from its direction of feed or travel at the crossings. This result is accomplished by forming the grooves so that the bottom of one is at a different level from that of the other at the crossings, and by chamfering the projecting point separating one groove from the other at the crossings. With this construction, it is said, the direction of feed is positively controlled even at extremely high speeds.

Another important improvement in the winding machine is its stop motion, which has been made simple and durable. The breakage lever against which the yarn engages is made strong, and yet sensitive. This pivots in combination with a stopping lever or dog so that, when the yarn breaks, the breakage lever moves back and allows the stopping lever to move into the path of a stopping cam, located below on a slowly turning shaft. As the stopping lever contacts with the stopping cam, it lifts the package from the drum, through a ratchet lever connected to the spindle arm and engaged with a pawl on a lever to which the stopping lever is attached. The lever to which the pawl is attached is incorporated with the guard in front of each spindle, and this is called the "thread guard." To this thread guard, which is a lever, is supported the breakage lever and stopping mechanism, so that this mechanism is self-contained in this unit, making it simple and easy of access.



Section of high-speed winder showing grooved guide roll, which eliminates need of reciprocating parts for traversing the yarn

To the stopping mechanism is also fitted a means for determining the size of the package, as attached to the ratchet lever is a sizing arm adjustable for various diameters. This arm holds a weight in place until the desired diameter is reached, when the weight trips, causing the stop motion to act, thus lifting the package from the traverse drum. An important feature in the stopping

mechanism is that it lifts the package through power and not with a spring.

The starting is easy and simple, it being necessary merely to lift a lever to start the winding spindle, and this with as little exertion as pressing a button. The starting lever is in combination with the stopping mechanism. When the thread guard is moved or pivoted backward through the action of the stopping cam against the stopping lever, it allows the starting lever to lock the thread guard in place. Herein the winder differs from the usual practice, and it is locked only when the spindle is idle, and unlocked when in its running position. Therefore when the starting lever is lifted, it releases the mechanism back to running position. The tension is of the disk type, self-threading, well-protected against wear, and easily cleaned and taken apart. The slub catcher is quickly and accurately set, making it convenient for changing from one yarn number to another.

The winder is coupled in units of ten spindles each, up to 100 spindles in a row, 50 spindles on a side. The spindles are 10 in. apart. Each side is independently driven by separate motors. The motors are mounted on adjustable bases, which in turn are mounted on a large drive-end base constructed to couple to the first bed. The first two spindles are mounted on the drive-end base to make up the row in even units of ten spindles. The winder is equipped with a switch control, so that the machine can be stopped anywhere along its length, as a means for safety. This switch control is incorporated with the supply shelf mounted on top of the winding machine.

An empty bobbin conveyor is also added to the winder. This is an endless fabric belt running through the center of the machine underneath, so that one conveyor takes care of both sides of the machine. The conveyor is driven by a chain from a sprocket on the stopping camshaft on the end of the machine remote from the drive end. No extra power is necessary for the conveyor, as it requires very little effort to drive it. Adjustment is provided for taking up the slack in the conveyor belt.

The winder throughout is light running and noiseless. It requires a 1½-hp. motor to drive one side of 50 spindles, or two motors for a full row of 100 spindles. The traverse roll mounted on a shaft running on ball bearings is very free and easy running even at high speeds. The only other revolving shaft is the stopping camshaft, which is slow turning, driven through a gear reduction.

A new spindle for use with this winder has been adopted. This spindle is so constructed that in combination with the wood cone (or tube), the wood cone will not turn backward when the spindle is idle. This is to prevent the yarn on the partly wound cone from getting caught in any moving mechanism on the winder. The spindle does not extend through the wood cone, thus preventing a dead-end projection for yarn to wrap around. The latch for holding the cone in place is on the back end, and the back end of the cone is recessed to accommodate the latch on the spindle. This latch operates automatically when the spindle swings into place and releases its hold when the spindle swings out. A double-bushed bearing of the self-lubricating type is employed.

In order to insure uniformity, the grooved drums are constructed of Bakelite. Positive guiding of the yarn, even at speeds of 800 to 1,000 yd. per min., is said to be assured. Since the drum drives the package at the same speed as the yarn delivery, the rolling action of the guide has no tendency to chafe the yarn.

Ball bearings are used between each drum to permit the greatest efficiency of the machine and also to insure lowest possible power consumption. Elimination of reciprocating parts is expected to reduce upkeep costs to a minimum. Yarn speeds may be easily changed through the driving mechanism by simply changing two gears. This makes the machine flexible and suitable for winding a large range of yarn numbers. The manufacturers state that they have successfully handled yarn as fine as 200s, and also find it satisfactory for the coarser numbers.

Since the cones may be built up to 8-in. diameter at the base; this permits the winding of 4 lb. of yarn to a package. For 30s yarn this amounts to 100,000 yd., and when this is used in the magazine creel for high-speed warping, a continuous run of the warper without stops for unnecessary creeling is assured. This package is also very satisfactory for twisting. The cone is released or locked automatically, and the empty bobbins are carried away automatically.

Fig. 1. Silk-soaking machine employs forced-feed circulation to bring soaking solution in contact with silk

Silk-Soaking Machine with Forced-Feed Circulation

SILK-SOAKING and tinting equipment based on the principle of the Franklin Process package dyeing machine has been announced recently by the Franklin Process Co., Providence, R. I. An outstanding feature of the machine is that it employs a continuous, reversible, forced-feed circulation, which brings the soaking solution into contact with the silk by means of hydraulic pressure ranging from 10 to 15 lb. Of the several advantages claimed for this equipment, perhaps the most important is that it enables about 90% exhaustion of the soaking solution, and thereby results in large savings of soap, oil, or other soaking material.

Other important advantages cited are the savings in time, inventory, and floor space made possible by increased speed with which soaking is accomplished. It is pointed out also that since soaking is completed in about two hours, use of the forced-feed machine permits greater flexibility, so that if a request for a special lot of silk is received in the morning, the silk can be soaked

immediately, thrown in the afternoon, and be ready for weaving or knitting the next morning. As the treatment takes place in a closed kier, an even temperature can be maintained throughout the bath and the same temperature duplicated from batch to batch without difficulty. In this way uniform soaking results and manufacturing difficulties are minimized.

The machine, which is shown in Fig. 1, consists of four units: the kier or tub in which the silk is placed, an expansion tank through which the soaking solution is added, a centrifugal pump which forces the solution through the silk, and a chain hoist for removing the cover and putting it in place. The unit is fully equipped with connecting pipe, valves, gages, and thermometer.

All parts of the soaking machine which come in contact with the silk or the soaking solution are made of an aluminum alloy which has been selected because of resistance to chemical action and which has been carefully finished to prevent damage to the material from rough spots on the metal. One machine has a capacity of a minimum of seven bales a day.

In loading the machine it is not necesary to open up and tie together the skeins, although this method may be followed if desired. As a rule, however, the operation consists simply of opening the noses of the skeins and putting them in the machine without further preparation. Tinting, when done in the Franklin Process machine, is conducted simultaneously with the soaking operation, the tinting liquor being entered in the soaking bath through the expansion tank.

Reference to the diagram representing a magnified cross-section of a bundle of silk showing the individual strands (Fig.2) will enable a clear understanding of the manner in which soaking is accomplished. If the skeins are immersed in the soaking solution, capillary attraction of the silk for the emulsion will draw the liquor from the outside of the bundle to the inside. Theoretically area No. 1 has to absorb the emulsion almost to its capillary capacity, before it will relinquish any of the liquor to area No. 2. Although some liquor seeps between the strands of area No. 1 to area No. 2 and on into the center of the bundle, this action is not immediate, and until area No. 1 has absorbed the liquor to its capacity, is retarded. Likewise absorption by area No. 3 is retarded until absorption by area No. 2 is completed, and so on progressively to the center of the bundle. In addition, countercapillary attraction also is believed to retard absorption, although seepage of the solution probably counteracts this effect to a considerable extent.

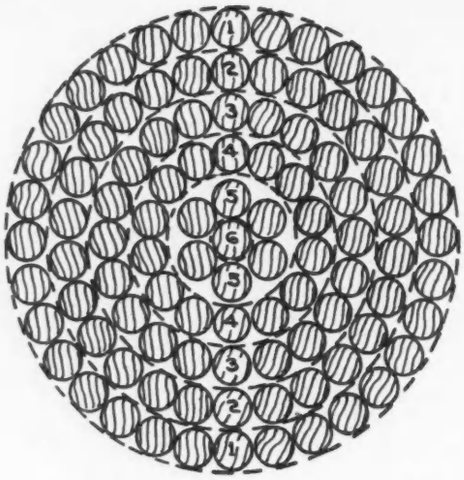


Fig. 2. Diagram representing a bundle of silk and showing individual strands

By applying the principle of forced-feed circulation, the soaking solution is brought in contact with all areas or strands in the bundle at the same time, and in that soaking of the entire bundle is completed in the amount of time which one area or strand requires to absorb to its capacity. Since the rate of circulation employed is faster than the rate of absorption, the liquor does not have an opportunity to exhaust during its first trip from the outside to the inside of the bundle. In this way, it is stated, there is no tendency for the emulsion to separate and thus allow the top areas to absorb more oil or soap than the bottom areas; good exhaustion and uniform soaking are insured; and the use of emulsion composed of neats-foot oil and olive-oil soap, as well as sulfonated oil or other prepared oils, is permitted.

The time required for exhaustion of the soaking solution when used in the Franklin Process machine is shown in Fig. 3. This curve, which is based on a series of certified tests conducted by an independent laboratory, indicates that an exhaustion of over 92% is attained in two hours, and that after this period, the added exhaustion is so small that extra running time is not worth while. While the exhaustion of the soaking bath depends on the nature of the silk and the type of emulsion used, it is said that in general, good exhaustion is obtained in 1½ to 2 hours and that the skeins are uniformly softened and are free from hard spots.

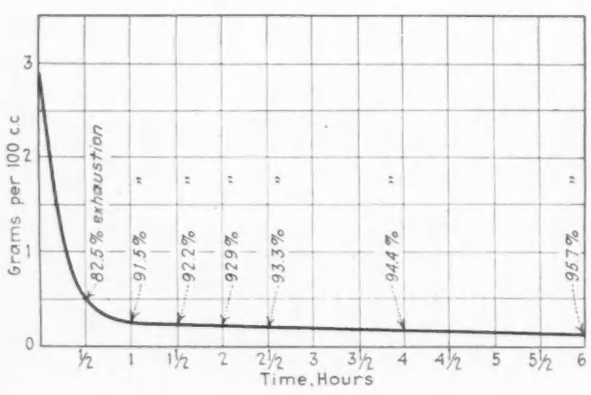


Fig. 3. Time required for exhaustion of soaking solution in forced-feed machine

Treatment for Improving Appearance and Handle of Rayon Fabrics

DEVELOPMENT of an improved method for treating fabrics composed wholly or in part of rayon or other synthetic fibers has been announced recently by A. W. Buhlman, textile engineer, 200 Fifth Ave., New York. This new process, which is covered by U. S. patent 1,786,421, is said to eliminate the harsh feel, high luster, and speckled face characteristic of many fabrics of this type, and to impart a soft, mellow handle which more nearly resembles that of real silk. In addition, it is stated, the treatment causes the fibers to swell, thereby accentuating the weave, and deepening and enriching the color.

The method for producing this improved appearance and handle consists of permeating the fabric with steam at a pressure of approximately 15 lb. and a temperature of about 213° F., and thereafter cooling the fabric and withdrawing the steam by forcing air through the goods.

Any one of several procedures may be followed in carrying out the method. In one process, for example, the fabric is wound upon a hollow perforated cylinder having bearing hubs engaging within bearing openings in the frame of the machine, and a hollow perforated pipe arranged at the axis of the cylinder, the pipe extending through one of the bearing hubs to near the opposite end of the cylinder

The cylinder is enclosed in a housing having a movable lid, which may be used to cover an opening of approximately 90° of the periphery of the housing. A blanket passes from a supply roll journaled in the frame of the machine, over suitable guide rollers to the cylinder, a layer of the blanket being arranged outside of each layer of the fabric.

While the cylinder, which is preferably about 30 in. in diameter, is being wound with a sufficient length of fabric, as for instance, 100 yd., steam at about the temperature and pressure above noted, is discharged through the hollow perforated pipe through the perforations of the cylinder, and through the fabric and the blanket wound thereon.

Directing or baffle plates are provided for directing the steam through a segment of about 90° of the cylinder, and this segment of the fabric and blanket is subjected to the action of the steam at one time. During the winding of the fabric and the blanket, the steam is injected into the cylinder, the cover being open at this time, and after the completion of the winding, the cylinder is kept turning back and forth, for about from one-half to two minutes, so that every part of the fabric and blanket is thoroughly and evenly permeated with the steam.

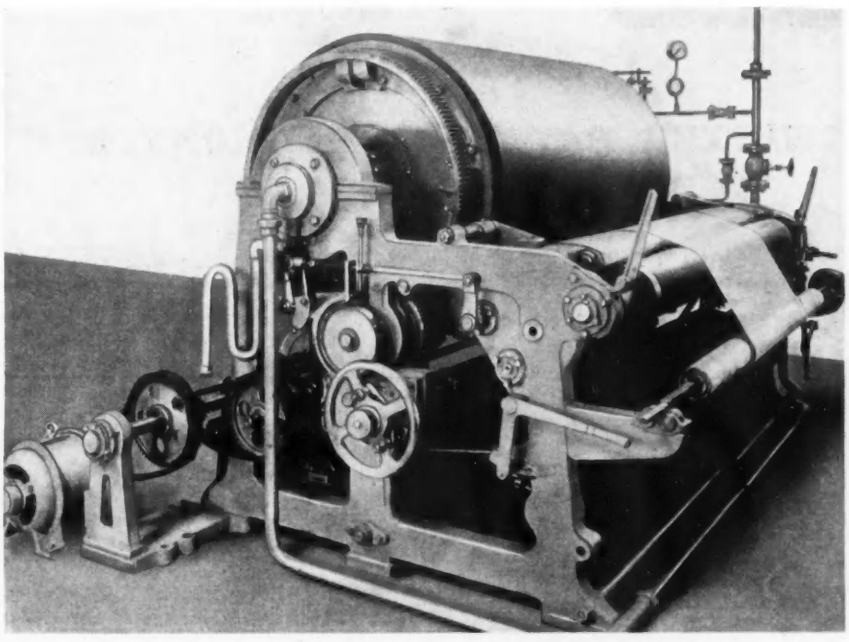
After the completion of the steaming, the steam is drawn off through the inside of the cylinder, by means of a pump having its inlet connected with a pipe, which in turn is connected with a bearing hub, so that when the pump is operating, air will be drawn through the opening of the housing, through the blanket and fabric on the cylinder, and through the perforations of the cylinder and bearing hub, thus removing the steam, and at the same time cooling the fabric. The cooling operation takes one-half to two minutes.

The fabric is now unrolled, passed over a folding device, and the blanket is rolled upon the supply roll. Steam is supplied by a pipe which connects with one perforated pipe and has a branch connecting with another perforated pipe within the housing, between the cylinder and the bottom of the housing. The inlet pipe also has a branch which communicates with the bottom of the housing. Valves are provided for closing communication between the inlet pipe and the perforated pipe, and between the branch line and the pipe inlet respectively.

In accordance with another method of procedure, the fabric is wound with the blanket onto the cylinder, as before stated, but without steaming. That is, the blanket and fabric are wound up completely, and fastened in position before steam is turned on. When the steam is turned on, the cover is closed and the steam branch inlet is opened. The steam is admitted between the housing and the cylinder, filling the space between the housing and the outer layer of the blanket with steam. The pump is operated to draw the steam through the blanket and the fabric to the inside of the cylinder, whence it is withdrawn through the hub of the cylinder and pipe.

In another method of procedure the fabric is wound into the blanket on the cylinder, as above stated, no steam being used until the winding is completed. The cover is now closed and steam is admitted to the inside of the cylinder, during a period of from two to five minutes. The steam is then drawn off through the fabric and the blanket, the fabric being cooled at the same time.

Another method of procedure, is to steam the fabric by either of the methods previously described. After the steaming, the cover if it has been closed, is opened, the warm fabric is unwound, and passed over a perforated cooling roller, and through a suitable folding device. The steam and cooling air are drawn through the fabric as it passes over the roller.



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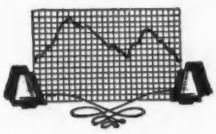
◆ *Survey of Fabric, Knit Goods, Yarn and Raw Material Markets* ◆

TEXTILE WORLD ANALYST



More Cheerful Wool Outlook Than for Some Months

By Dr. L. H. Haney

THE outstanding developments in the wool industry which came to light during the last month have been (1) the strength of foreign markets, and (2) the improvement in domestic manufacturing activity. The strength of raw wool in Australia was not accompanied by a proportionate improvement in Bradford top and yarn prices, but there was some improvement in European manufacturing activity which gave a feeling of greater cheerfulness.

The developments of the last month which operated to bring domestic prices down and foreign prices up, have tended to reduce the fear of foreign competition. (This had become so threatening that a suggestion was made favoring an embargo or an emergency tariff such as was put into effect in 1920.)

In view of these more hopeful developments, it is disappointing to learn that the new domestic clip overhanging the market is to be a "bumper." That the supply situation will remain easy, with a large carryover and a record clip, there can be little question. Since general business remains depressed, and the demand for wool goods therefore promises little sustained improvement, it is difficult to see how domestic wool markets can make a sustained advance for some time.

Favorable Factors

The factors which tend to support the price of raw wool follow:

1. Foreign primary markets have all been firm to strong; the depressed exchanges in Australia favor speculative buying; on Dec. 1, stocks at selling centers were below last year.

2. Improvement in manufacturing activity on the Continent was reported to have occurred in February.

3. Domestic mill consumption increased in January; spindle and loom activity also showed gains.

4. Imports of wool have been at the lowest level in recent years; domestic receipts have also fallen off sharply; both receipts and imports are low compared with consumption.

5. Bradford top prices added to their gains in February and early March.

6. Statistical position of yarns has strengthened somewhat.

7. Replacement margins of manufactures have improved in recent months.

8. Clothing industry is reported to be nearing stability.

9. Raw wool is now priced almost as favorably as cotton with relation to the general price level.

Unfavorable Factors

The factors which tend to depress the price of raw wool follow:

1. Some Australian wool has been taken in payment for debts, and is likely to be resold in London. (The depression of Australian exchange has led the National Raw Wool Marketing Corp. to say that an embargo is necessary to keep out foreign wool.)

2. The stocks of raw wool in the hands of European manufacturers are probably large.

3. There are approximately 52,000,000 sheep to be shorn in the United States, —a new record; an increase of over 70,000,000 lb. in the domestic clip is indicated.

4. Increases in raw-wool prices abroad have lowered manufacturers' margins; Bradford top and yarn prices are said to be below parity with Australia.

5. Stock of tops in Continental commission combing establishments increased 3,000,000 lb. on Feb. 1.

6. The activity of worsted combs failed to make the normal seasonal gain in January.

7. Worsted yarn prices have been weak.

8. Men's clothing cut in December amounted to only about one-half as much as a year ago.

9. Price cuts are expected at the opening of fall fabrics.

10. Consumer purchasing power continues at low levels.

11. Retail credit conditions are poor.

The foregoing analysis furnishes a more cheerful view of conditions in the wool industry than has been seen in many months. The strength of raw wool prices in all foreign markets tends to lessen the possibility of large imports. Strong foreign markets and increased manufacturing activity here, should presently check the decline in prices in domestic raw wool markets. But conservative buying policies should

Summary: **Wool manufacturing activity has increased, but not at the expense of manufacturers' replacement margins as in other textile branches. Worsted spindle activity appears to be in good balance with cloth manufacturers' requirements, which indicates that spinners' margins should be relatively stable. The new clip constitutes a large potential supply of raw wool, but supplies of old wool are being reduced, consumption has increased, and foreign prices are strong. It appears that raw wool prices are approaching at least temporary stability.**

The analysis and forecast by Dr. Lewis H. Haney, Director, New York University, Business Research Bureau, which regularly appears on this page, considers various branches of the textile industry from week to week. The conclusions reached in the Analyst are mostly forecasts and generally apply to a time two or three months ahead. The Analyst is based on statistical data and does not reflect temporary trade sentiment.

Smart durene shorts and bandeau, from Harry P. Eckstein . . . Durene stockings from Fisher Hosiery Company.

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STANDARD-COOSA-THATCHER COMPANY, Philadelphia, Pa.

be maintained, since the carryover will be large and the new domestic clip will exceed that of a year ago. Furthermore, there is no definite indication yet that general business has passed bottom, and, while the wool industry might lead general business out of the depression as was the case in 1921, it is advisable to await some concrete evidence of improved consumer buying.

The price of raw wool declined again last month almost as rapidly as was the case in January. The TEXTILE WORLD index of raw wool prices was 55.9% of the 1921-28 average in February. This was a new low and compared with an index of 59.0% in January and 72.7% last year.

The most encouraging positive improvement in the wool situation was the more-than-seasonal gain in mill consumption of raw wool. Manufacturers have tended to show preference for the fine grades, but demand as a whole was larger.

For several months it has been pointed out by the Analyst that the relatively larger decline in total wool receipts in the United States as compared with mill consumption, has given a suggestion of possible improvement in the domestic raw wool situation. Supplies have no longer been piling up, and probably have been reduced. The way has been prepared for more stable wool prices. But, as we have stated, stronger prices have awaited an increase in consumption, stable commodity prices in general, and stronger wool prices abroad.

Now we find some of these desired conditions developing. Foreign wool prices were stronger in February. But the same can not be said for commodity prices in general. Most of the leading indexes declined 1.5% or more last month. Here, then, is a partial explanation of the weakness in domestic raw wool prices in February. There are also the facts that the supply of old wool is large and a large new clip will soon begin to come on the market. These facts would seem to indicate that stability is about all that can be hoped for during the next few months, and that advances such as have occurred abroad are unlikely to be witnessed in the domestic market.

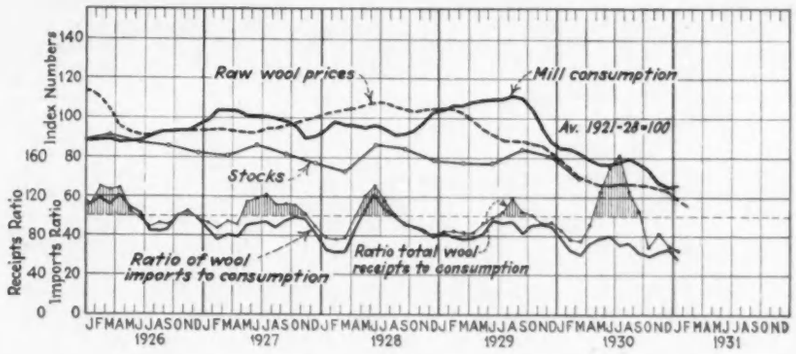

Fig. 1. RAW WOOL BAROMETER: Price—TEXTILE WORLD Index: Mill Consumption—Grease Equivalent, Average Daily Adjusted for Seasonal Variation, Three-Month Moving Average; Stocks—U. S. Total, Grease equivalent, End of Quarter, Adjusted for Seasonal Variation. Ratio of Total Raw Wool Receipts in the U. S. to Mill Consumption—Receipts not reduced to grease equivalent, adjusted for Seasonal Variation, Consumption as above, Three-Month Moving Average. Average for 1921–1928 = 100 for all four indexes, Ratio of Raw Wool Imports to Mill Consumption—Imports not reduced to grease equivalent, Adjusted for Seasonal Variation, Consumption as above, Average 1921–1928 = 50, three-month moving average.

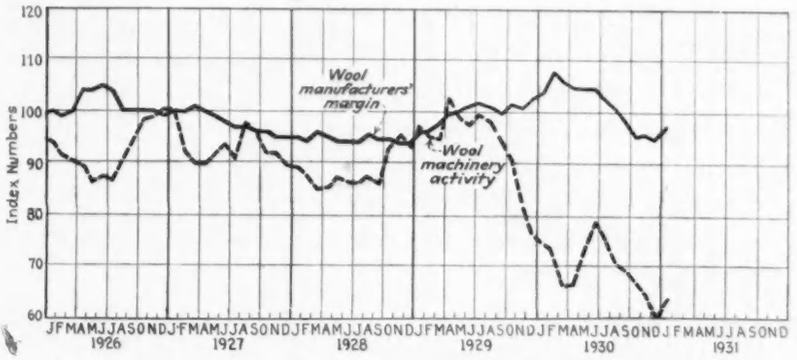

Fig. 2. WOOL MANUFACTURERS' MARGINS AND ACTIVITY: Wool Manufacturers' Margins—Average of Replacement Margins; Wool Machinery Activity—Composite of Loom and Spindle Activity, adjusted for seasonal variation; Average 1923–1927 = 100 for both indexes.

Market Briefs

Cotton: *Prices weaken; trading quieter.*
Cotton Yarns: *Less active and slightly easier.*
Cotton Goods: *Market digesting price advance; buying steady.*
Wool: *Fine wool strong, mediums weak; foreign markets advance.*
Worsted Yarns: *Knitters buying; prices hesitant.*
Wool Goods: *Demand lighter, pending openings.*
Silk: *Steady; prices easier. Strictly spot call.*
Silk Yarns: *Spun yarns firm; fair demand. Thrown yarn quiet; prices soft.*
Silk Goods: *Buying uneven; low-price lines sacrificed; shantungs improve.*
Rayon: *Spirited demand, with trend to 100 deniers.*
Knit Goods: *Full-fashioned hosiery stronger. Spring underwear and sweaters active; fall lines backward.*

The index of mill consumption of raw wool gained a little more rapidly than that of spindle activity. The January consumption index was 70.3% of the 1921-28 average, against 60.6% in December and 90.6% in January, 1930.

The index of comb activity failed to make the usual seasonal gain, however, and in view of the sensitiveness of this index there is some suggestion that the improvement in manufacturing may not continue at the January rate.

Worsted sales yarn prices, according to the TEXTILE WORLD index, declined in February to 70.4% of the 1921-28 average. The January index was 72.9% and a year ago was 85.2%. Further declines are probable until raw wool definitely stabilizes, but the relationship between worsted spindle activity and loom activity is about neutral. No advance in spinners' replacement margins is, therefore, predictable, although they should not fall much further.

As to cloth, the spurt in weaving activity since the first of the year confirms the reports of a healthy condition of inventories. One point of interest is that the manufacturers' replacement margins improved in January, notwithstanding increased production of goods. In this particular, the wool goods industry is better situated than are cotton and silk, in both of which the margins have touched new lows.

There seems to be little question that fall openings will show a decline; the only question is how large it will be. No strength in wool goods prices is to be expected until raw wool stabilizes.

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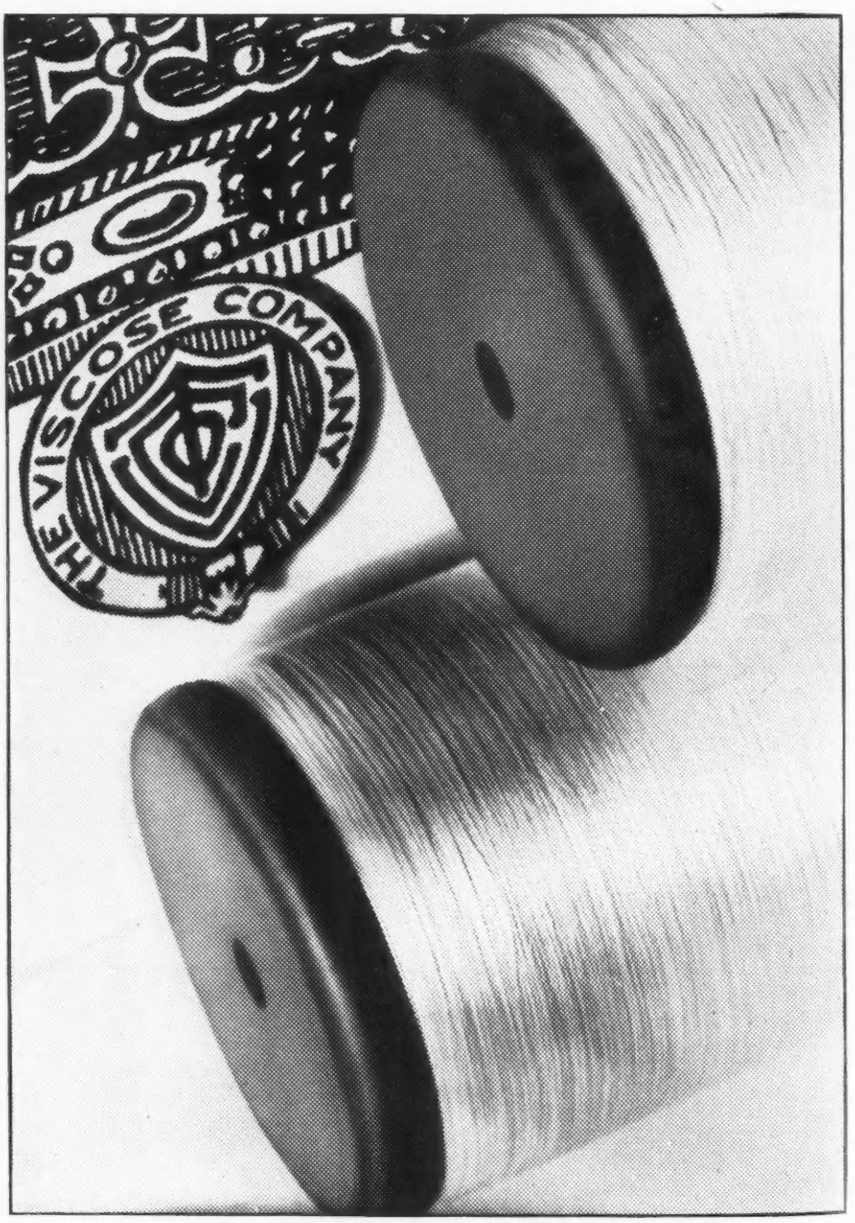

THE VISCOSE COMPANY

200 Madison Avenue, New York City

FABRIC MARKET REPORTS

TEXTILE WORLD ANALYST

◆Cotton Goods Plans Facing Keener Test

TRADING has been almost, if not quite, at peak activity rate for the year. Yet there is talk here and there among sellers that a short period of digestion of the huge business placed during the year to date, may be close at hand. Faint signs that such may be the case have been noted in that second hands lately have been offering print cloths more freely on the lower side of the price range.

Although a lull may be a natural consequent to the exceptional amount of buying which has taken place, it will not prove of long duration; neither will it mean that spring buying has been largely satisfied. On the contrary, sellers look for active trading in most cotton fabrics during the spring months, with buying tapering off during the summer.

Profits Now Possible

Aside from this angle, the market may meet with other tests, which will be more critical than any experienced during recent months. Print cloths and broadcloths have been the market leaders in price advances and the latter are now selling on what is generally felt to be a profitable basis. The mills are able to make a little money for the first in several of these fabrics.

In the print cloth division sellers assert that prices have advanced to a point where there is a profit in the most active lines for night running mills but day run plants are only able to break even. Other cotton goods have not advanced to such a degree and in most cases still show a definite red result for the mills.

Test of Curtailment Program

With cotton goods trending in the direction of a better leeway for the manufacturer, a point is close at hand where the curtailment program which has been followed will meet a severe test. There will be a sore temptation for manufacturers seeing a profit for the first time to start larger production schedules. For this reason the next month will be a critical one.

Too much cannot be expected in the way of further expansion of mill margins for a while. Progress in this respect has already been begun and if too much is attempted at once there will be unloading by speculative buyers, who, selling houses say, have been evident in considerable numbers during recent weeks.

Sheetings Are Active

Sheetings are active and cotton dress fabrics are showing marked expansion in sales. It is noticeable that converters have not advanced prices generally as yet although gray goods costs have been rising. Such a turn may be expected in the near future.

The Hunter company in its latest market letter says that sales for last week were the second largest of this year; its volume of colored goods sales has been almost as good as in print cloths and sheetings. Sales ran 250% of production that week.

◆Broadsilk Fabric Demand Uneven

DEMAND for broadsilks is uneven; certain weavers claim to be doing good business, both in spring prints and summer fabrics, at list prices, while others are obliged to cut drastically on spring lines to effect clearance. Spring flat crepe prints in the low-price range are weak; the only price strength now manifest is in quality lines. Retailers continue to show unusual interest, and are placing substantial orders for both late spring and early summer fabrics. These distributors also are placing business for shantungs, chiefly plain pastels; cutters are sampling shantungs but are slow to buy. Almost all the larger orders now being written are for plain fabrics; broadsilk mills reported continued dissatisfaction from the quality retailers and also manufacturers of higher-priced dresses, regarding the status of prints. The emphatic tradedown in printed flat crepes, and the vast quantities of poor quality prints available have spurred the quality houses, both retail and manufacturing, to turn their attention to plains.

Pastels Important

Pastel shades grow more important daily; spot orders for flat crepes stress these shades, and shantung call also favors the pastels. Printed chiffons took a spurt this week, but prices were weak. There is much distress merchandise in the New York market, chiefly last year's patterns, and this has offered competition to current lines. The higher-grade chiffons are not affected by this weakness to any extent; weavers claim to be getting good-size orders at list price for chiffons.

Outlook Uncertain

Conflicting trends make it difficult to appraise the market this week. Prices are far from firm, but quality lines appear to be holding their own. The tendency is toward lower levels; prints in particular are scheduled to weaken further, due to fashion preference for plains; chiffons already face competition. Certain aspects are encouraging, however. There is no glut of stocks; distress merchandise pops up here and there but generally weavers are producing cautiously. It may be assumed that trend for the next four weeks will favor medium to high-price lines, where sales will be limited, but profitable.

◆Wool Goods Trade On Home Stretch

THIS is a busy time for manufacturers of wool goods but is fast becoming duller for selling houses. Bulk of the business in dress goods and coatings for spring wear has already been placed and mills are rushing to make deliveries by April 1. This date is regarded as the "dead line" in women's wear, although manufacturers are hoping that their customers will relent and give them to the middle of the month.

After the first of next month the risk will be increased 100%. It will be in the hands of fate whether customers will take deliveries after that date or not, but when mills make the deliveries before that time then "an order is an order." The problem for the mill is an important one now. Should they take a chance and make up more goods than on order, trusting that carry-over spring demand will take the surplus?

Spot Demand May Continue

There is a fair chance that this will occur both in men's and in women's wear fabrics. There has been a complete cleaning up of stocks and this type demand has been far from satisfied. Under these conditions it is logical to foresee the carry-over into next season of good nearby demand.

Men's Wear Prices May Be Lower

Men's wear trade is looking forward to opening of heavyweight lines later this month. There are predictions that the new prices will be 7½ to 10% lower, and others that they will be 7½ to 10c. lower. Present prices give an idea what buyers have in mind, demand for women's coatings being best in $1.50 to $2.00 range.

Dress goods volume has been in fabrics that are priced around a dollar. Men's wear goods have been wanted in the $1.75 to $2.25 limits.

New Prices May Surprise

While sellers recognize that demand during recent weeks has been a seasonal development, it has given them a firmer attitude and they approach the new season with more backbone than was felt possible two months ago. The better tone in world wool markets is a factor of major importance in this change and may result in surprises to the bears when new prices are named. It is possible that February prices were the low point in the downward trend.

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EXAMPLE
No. 2

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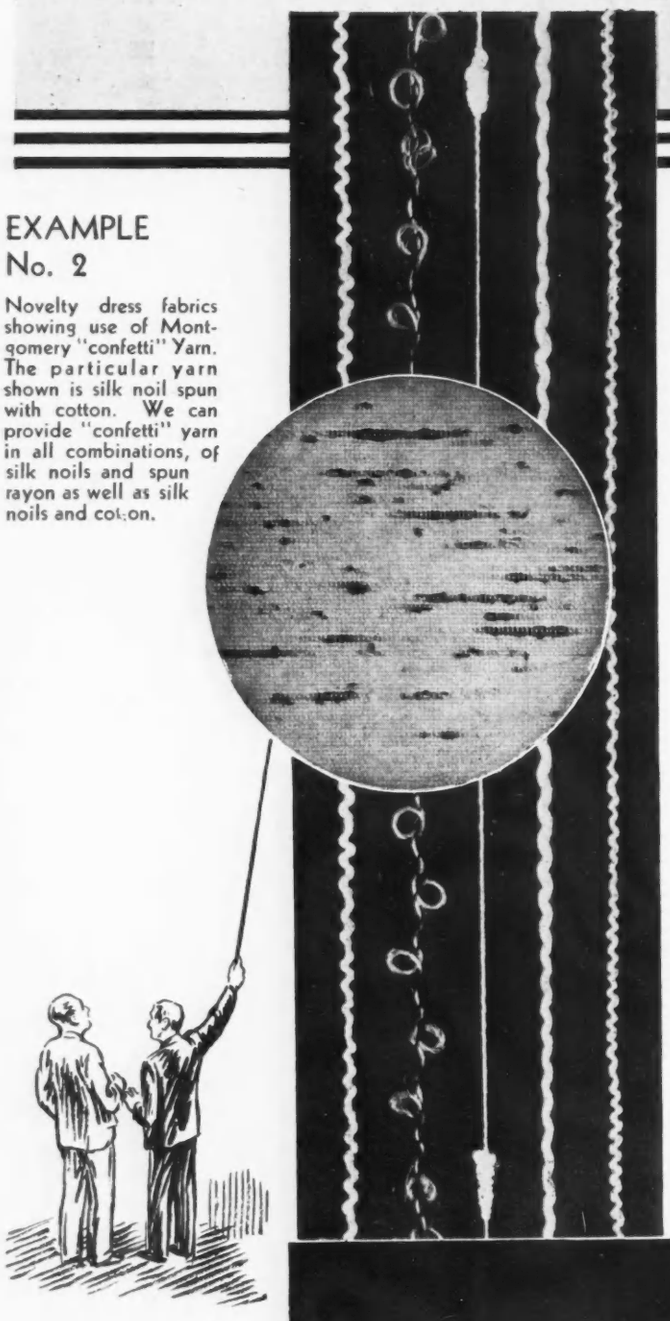

ONE worth while suggestion on the production of a novelty fabric can take a big slice off your production costs, or vastly improve the appearance of the finished goods. That's why Montgomery representatives are trained not only in spinning novelty yarns, but also in the art of adapting these yarns to the fabric you have in mind.

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KNIT GOODS MARKETS

TEXTILE WORLD ANALYST

◆Spring Weather Aids Underwear

UNDERWEAR lines for immediate use continue in demand. Men's cotton running pants sell steadily, and mills have difficulty in making deliveries. Styles have a shorter season this year than ever before, it is commented; mills offer new lines almost weekly, withdrawing a style as soon as orders show the slightest weakness. Men's cottons are most popular in white with conservative style effects. White grounds with faint stripes, in blue or tan, and equally faint figures, are preferred. Both men's and women's rayons picked up during the past ten days, thanks to spring-like weather; some firms reported rayons moving more actively than cottons.

Underwear jobbers and retailers are somewhat more confident, but they buy very cautiously. They do not look for any real up-turn until fall. A few large chain groups are definitely optimistic and ready to take a chance; they buy freely both for summer and fall.

Heavyweight underwear improves slowly. Buying is uneven, and knitters are resigned to a backward season. Market tone at this end is good. Mills are planning a conservative policy on production; and there seems little likelihood of heavy stocks in September. Orders increase day by day, but at a snail's pace, which is a true reflection of retail sentiment.

◆Bathing Suits Again Active

OUTERWEAR shares the general improvement in knit goods sentiment, but here too buying is restricted to nearby needs. Spring sweaters are moving well, mostly moderate to low-priced merchandise. Knitted ensembles excite less attention than usual this season, but mills look for better response at that end later. There are reports of overproduction and a trade-down tendency in the knitted dress field. Producers of quality lines say their market continues firm; but at the volume end the outlook is not so promising.

Bathing-suits have picked up once more, due mainly to the advancing season. Practically all original orders now have been placed and some firms are writing duplicate business. Prices are not too satisfactory as regards margin, but they hold rigidly to current levels. Mill representatives insist they will not cut further, and certainly there is no early prospect of weakness. Stocks are in reasonable proportion to advance business, though there is some possibility of overproduction of cheap lines. In women's low-priced suits, the call is chiefly for navies and blacks while ensembles are active in the quality lines.

Fall sweaters continue sluggish and no real buying is expected for 8 to 10 weeks. Knitters note a slow improvement, and they believe that the season, though late in starting, may equalize itself eventually.

◆Full-Fashioned Prices Tighten Steadily

EACH week finds women's full-fashioned hosiery in a slightly better position, with buying more active and prices firmer. There is further talk of a possible price advance and though quotations at the moment remain unchanged, it is significant that the National Association says, in effect, "full-fashioned hosiery prices have not advanced—as yet." Orders are small but frequent, and there is some little future buying; several important Worth Street agents are writing full-fashioned business for mid-April delivery.

The call is mainly for 42 and 45 gauge numbers in summer shades. Full-fashioned stocks are still unhealthily heavy, but the quantity of distress merchandise appears to be lessening. New York factors look for a real strengthening next month when, they say, the result of the curtailment drive will begin to manifest itself definitely. Easter business is uncertain; a fair percentage has been placed, but Easter is not bringing the concentrated bulk buying this year that it brought prior to the depression.

The Philadelphia strike has strengthened the market there, by cutting down production, knitters report. The trade now looks for a prolonged dispute in that situation. New York factors do not believe the walk-out will have far-reaching effects, except as regards reducing full-fashioned stocks. Announcement that certain mills were planning to use 20/22 silk instead of 13/15 for full-fashioned hosiery production caused some discussion in the market; these stockings all will be three-thread which agents point out, would give increased sheerness, more transparency and style, but less durability. It is believed that 20/22 silk hosiery has possibilities as a quality proposition with limited volume.

Half-hose is more active, the call being chiefly for the medium and low-priced lines. Numbers retailing at three-pairs-for-a-dollar, with double soles and high spliced heels are in good call; spirals in neat patterns of conservative colors are preferred. Several firms are sold 3 to 5 weeks ahead on certain of these numbers. The 25 and 35c. lines also are moving. There is little interest in half-hose retailing at 50c. or upwards, and several mills this week announced that they had temporarily discontinued these lines. Half-hose stocks are heavy, and there is some distress merchandise available, but generally the tone is better. Mills are producing cautiously. Anklets are picking up in all ranges especially lines retailing at 25c., and agents look for a spirited market here within a few weeks.

◆

Textile Machine Works Will Supply Single-Unit Machines or Convert Any "Reading" Legger

The Textile Machine Works, Reading, Pa., through its president Henry Janssen, has made the following interesting statement on the matter of single-unit full-fashioned machines:

So many inquiries have been received regarding our position in the matter of single-unit full-fashioned machines, that we feel it advisable to make the following statement:

Single-unit machines have been in existence more than 30 years, and the reason they have not been accepted by the manufacturers is that these machines were either too complicated and cumbersome to operate economically, or the construction of the stockings produced on them was not equal to the standard full-fashioned product.

Anticipating the agitation caused by the renewed interest in the single-unit machine we have, during the last year, again made exhaustive tests with various systems of this type of machines, giving proper consideration to the latest improvements developed by ourselves and others. We have also caused a careful survey to be made of the hosiery distributing agencies, buyers and the ultimate consumers and have come to the conclusion that the single-unit stocking is not profitably marketable at the present time. The general reaction is that on account of its construction the single-unit stocking cannot command the same price as the regular full-fashioned product and, granting for the sake of argument, that in the former there is a saving in production costs, this would be more than absorbed by the substantial concessions which the buyer feels he must receive in order to sell this new stocking in competition with the regular full-fashioned product of comparable quality.

In view of these findings we cannot whole-heartedly recommend to our customers the purchase of single-unit full-fashioned machines. However, for those manufacturers who desire to carry on their own experiments, we are prepared to furnish machines to produce single-unit stockings. Prompt deliveries can be made and the cost of these machines will be only slightly higher than that of our regular leggers.

Or, if desired, we can convert any "Reading" leggers now in operation, into single-unit machines at a very low cost. In case these experiments should not show the expected results we are ready to *reconvert the machines into regular leggers at a very reasonable charge.*

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STYLES THAT SET THE STYLE

YARNS AND RAW MATERIALS

TEXTILE WORLD ANALYST

◆Cotton Spinners Strive to Hold Gains

BUYING of weaving yarns, which has been the feature of the cotton yarn market during the last few weeks, has fallen off materially. As buying became less active there was an easing from the top prices that had been rapidly named during the advance in cotton and expansion of demand from weavers. The market price level will receive a thorough test the coming week.

If demand again develops, current prices will be maintained or raised; if demand continues dull a further sagging trend may be seen. It is recognized that prices were stepped-up quickly and if demand does not come back these may not hold.

Market Facing A Test

Spinners had raised ideas on 20s-2 warps, average quality, to the 22c. mark last week. Within the last few days the top price paid has been 21c., and there are several spinners willing to shade this figure. Manufacturers have already bought a large quantity of yarn for nearby needs and they are content to step aside for a time to see if spinners will be able to hold or not.

The same situation is seen in carded knitting counts. Quotations are at a 19c. basis for 10s cones, average quality comparing with a top of 19½c. asked last week.

It has been a poor season to date for carded knitting yarns although this is normally an active time for delivery of lightweight counts. Knitters should be displaying interest also in heavy and mediumweight numbers for next fall goods. Neither has been good. Knitters in New York and Pennsylvania are still operating on greatly curtailed schedules and this is apparent in their yarn purchases.

The most promising feature of the knitting situation is the fact that old contracts bought at considerably higher figures than now prevail, have been placed in much better position during recent weeks and spinners are less concerned about these than at any time this year.

Mercerizers have not been booking large orders except where concessions have been made; but they have made progress in obtaining larger deliveries on old contracts. There has been no change for the better in mercerized qualities during the last three weeks but conditions are better than they were earlier this year.

Better Combed Sentiment

Reports from southern combed centers assert that these yarns have shown decided improvement. One important combed group recently sold close to a million pounds, mainly to processors, at low prices, according to these reports. With this stock out of the market improvement will be possible.

Other favorable factors in combed yarns are: elimination of night shift in many plants and the re-opening of the First National Bank in Gastonia with which several spinners carried accounts.

◆Cotton Eases As Demand Slackens

DOUBT of a sufficient reduction in acreage following the recent advance to above 12c. for October contracts has been reflected by a more reactionary or bearish average of sentiment in the cotton market here during the week. October contracts which sold up to 12.18 on the advance of late last month broke well below the 11½c. level toward the end of the week, and, while trade buying remained in evidence, it was mostly on scale down orders.

Uncertainty on Acreage

Uncertainty as to acreage intentions has been increased, doubtless, by recent statements attributed to officers of the Federal Farm Board. J. C. Stone, the new chairman of the board has been credited with what amounts to practically a reiteration of a recent statement by Alexander Legge that present prospects do not indicate a reduction consistent with the prevailing statistical position. Mr. Stone is credited with saying that reports to the Farm Board do not indicate a material reduction in cotton acreage this season. Reports, he said, are conflicting as some are to the effect that cotton planters in some sections lack the money to make a crop this year. One thing appears certain, he is quoted as saying, that in large areas of the belt, farmers will be unable to purchase fertilizer for their cotton fields, so that the result may be a small yield on the same acreage.

A material reduction in acreage under prevailing conditions as to old crop supplies and the immediate demand, might be interpreted as a cut of 25 or 30% which some of the statisticians have indicated as necessary to bring supply and demand into balance. In comparison with this figure a reduction of around 6 to 8% or perhaps anything under 10% might possibly be considered disappointing, and no figures were mentioned in the Washington accounts of Mr. Stone's oral statement. Traders here, however, are evidently inclined to question whether the reduction in acreage will be sufficient to establish confidence in higher prices for cotton next season, while they are also inclined to think that the ultimate yield of lint cotton per acre will depend more largely upon growing conditions than upon any of the preliminary factors so far developed.

In a general way it is usual for a drastic cut in acreage to be accompanied by a reduction in yields per acre, but during previous seasons such curtailment in acreage has followed yields per acre well above the ten-year average while last year's yield was below the ten-year average. There seems little doubt that there is to be a sharp reduction in the use of fertilizer, however, as tag sales for the three months December-February for the 13 southern States showed a falling off of 33.8% as compared with last year, according to the National Fertilizer Association. Moreover the mild winter suggests a greater insect hazard during the summer. Crop preparations, however, are well up to normal except in Southwest and Central Texas where they have been delayed by rain. The February rainfall is supposed to have improved soil conditions so that except for the decrease in fertilizer sales and the possibility of increased insect activity, there seems nothing against the production of a fair yield next season as compared with a ten-year average. This would not mean a large crop for the ten-year average yield per acre, including the December estimate for 1930, is only 151.7 lb. per acre, which compares with 187.8 lb. per acre for the ten-year period ending with 1914. There must be a certain significance in these figures, which would suggest a steadily decreasing productivity. That would seem to call for more intensive cultivation.

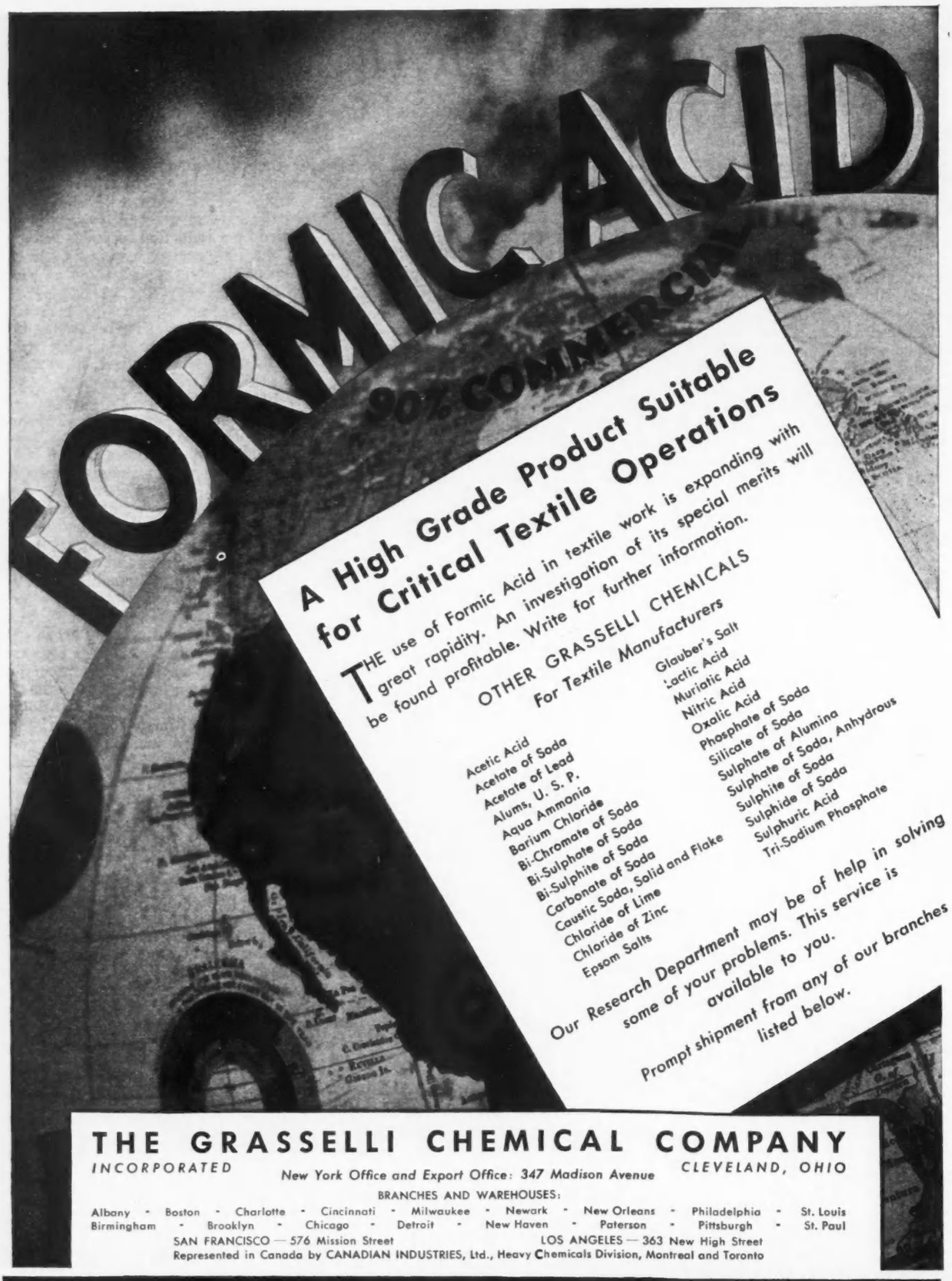
Expect Small World Consumption

There may have been some selling toward the end of the week on expectations of relatively small world's consumption figures from the International Federation. The publication of these figures was delayed owing to late returns from Russia. When available they will compare with the estimate of the New York Cotton Exchange Service, placing world's consumption of American lint cotton for the first half of the season at 5,496,000 bales. Consumption for the half year ended Jan. 31 last year amounting to 7,083,000 bales and for the half year ending July 31st, 1930, 5,940,000 bales.

Reports reaching here from the South during the week have indicated some falling off in demand, but a generally steady basis.

Fairly General Demand

MEMPHIS, TENN., March 9.—Although demand for cotton in this market still centers on ⅞ to 1 1/32 in. low and medium grades, which, for months, have been scarce, there is some demand for nearly everything offered. Basis on the medium and better grades remains about unchanged, while from 10 to 25 points better basis is being paid for the lower grades. Demand for 1 1/16 in.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YARNS AND RAW MATERIALS

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and longer cottons is maintained at about the level of recent weeks, with the basis practically unchanged.

The staple association reports sales for the week far in excess of any week since October; says that demand came from practically all sources of the textile industry and apparently is not yet satisfied but complains that the basis is unsatisfactory, especially on medium grade staples. Sales here during the week totaled 12,994 bales against 8,164 bales last year and 31,289 bales the year before, making 586,840 for the season against 926,417 last year and 750,063 the year before.

Southern Receipts are Light

Receipts continue to run remarkably light. Net receipts since the close of the last week in December have totaled only 73,860 bales against 178,370 the previous year and 216,311 the year before; this shrinkage is due in part to the fact that no cotton has been shipped here this year to avoid flood risk. Floods this year are regarded as impossible. Shippers, while complaining that mill demand is poor and usually for small hand-to-mouth orders, say that most of it is coming from southern mills, although demand from New England is somewhat broader as to descriptions. Liverpool seems more interested, with some evidence of buying for very far ahead, in some instances as much as two years. The week was mostly unfavorable for field work over most of the belt.

◆Comber and Strips Most Active Wastes

THERE was a slight let-down in demand for certain grades of cotton waste this week, although the volume of business moving is still much larger than it was during January and the greater part of February. Spinnable materials, particularly peeler comber and strips, continue to show the greatest activity. Several dealers report increased interest in these wastes from woolen mills. Demand from this source has been greatly curtailed in recent months owing to increased use of rayon waste and the relative cheapness of woolen and worsted wastes.

Fair thread demand is reported from leading consumers at around 6¾ to 7c., while single spooler has moved in fair volume around 7¼c. Peeler strips are held firmly at 7½c., many dealers turning down offers below that figure. While no real advance has taken place in picker and fly prices, the available quantities of cheap picker are less than a month ago, and this has imparted a firmer price tone to these wastes.

◆Fine Worsted Yarns Show Steady Tone

SALES worsted yarns do not reflect confidence by the trade as yet. While the raw material market, especially in the finer sorts, has been giving a better account of itself, this gain is reflected only to a limited extent in the yarn market. Fine yarns are firmer than medium grade yarns, but they are not strong and buyers are able to pick up all they require at former low prices.

Outerwear yarns in the medium grades have shown a downward trend within the last few days and several large spinners were soliciting business at 2½c. under last weeks's level. Single counts for this trade in French and English spun have been steady, English spun being firmer at $1.00 to $1.05 basis for 1-15s, 50s. Cheaper lots are gone.

Australian Yarns Firm

One of the most interesting developments this week was the attempt of a large spinner to advance prices of fine weaving yarns 5c. He did this because of the strength that has been seen in fine wools of this sort. He admits that it will be some time before buyers find it necessary to meet the latest ideas.

There is no doubt that fine wools are firmly held and the effect is seen in yarns. Quotations of finer grades, 64s and finer, are in a separate class from medium grades such as 48s and 50s. In the latter, concessions are still being made and spinners are in greater need of new orders than those who specialize in finer grades and counts.

Spinners as a whole are not optimistic although admitting that much quick delivery business for the spring and summer season will soon come to their hands. Indications that this buying may be close at hand were seen this week. Bathing-suit manufacturers took larger quantities but most of it was for prompt and nearby shipments. There is a noticeable lack of confidence in the future.

Larger Consumption Needed

Two main factors are holding recovery in yarns back. One is the slow increase in consumption of sales yarn spinners' products; the other is the lack of certainty regarding raw material prices notwithstanding the firmness that has been seen recently in fine grades.

While there has been improvement with knitters, weaving yarn sales are small. This is natural at present, it being between seasons but demand has not been good heretofore. Spinners of mixes have made progress in that they have about clearned up the old contracts on their books and when goods business in the next season is placed sales yarn spinners will be in good position to benefit.

◆Domestic Wool Situation Unchanged

UNSOLD stocks of wool in the Summer Street district are much smaller than at the beginning of February. There has been a large movement at fairly firm prices. The foreign wool situation is decidedly stronger and to this extent has been a favorable factor in influencing local sentiment. Topmakers and mills continue to buy for immediate requirements, the bulk of the business being in original bag wools.

The position on Summer Street is tending slowly in favor of sellers of merinos, yet stocks are so large and the new clip of such probable size that any improvement beyond the spot position seems dubious. While there is a moderate demand and on a broadening range, large sales are less frequent than a month ago. Mills seem confident that supplies of domestic wool will be fully adequate to any requirement and are willing to let the market take its course.

There is less activity since the first of the month and business is not arriving in sufficient volume to test values. Manufacturing seems to be gaining and is presumably putting into consumption quantities of wool purchased since the first of the year. Domestic merino wool of the new clip seems to be stabilizing around a 60c. clean basis. Recently purchased Arizona wools are for the most part held at this price though a few small sales have been made slightly below.

Cooperatives and independents continue to tie up wool on pre-shearing loans in the West. Shearing has resumed in Arizona, and several additional small clips have been consigned to independents and cooperatives. The Ohio Wool Growers Cooperatives Association will handle their own wool, encouraged by a gain of some 600 consignors in Ohio during the year 1930. A notable feature of the Boston market is the firm position maintained by the finer fleece wools, Ohio delaine and half-blood being particularly strong. These wools are quoted 4% higher than similar territory wools clean basis, but on the other hand the quarter and three-eighths bloods are quoted about 5% lower than similar territory wools.

Real Advance at London

The second series of London wool auctions opened Tuesday, March 10 with 12,000 bales on the catalogue, covering a good selection of Australian

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and South American greasy combing wools. Withdrawals were negligable. Rising markets in Australia and South America since the close of the first London series in February led to general anticipation of higher prices, but the competition was so keen that prices made exceeded easily highest previous estimates. Merinos advanced 20%, fine crossbreds 15%, low crossbreds 20 to 25% as compared with February closing prices.

◆ Woolen Materials Make Slow Gains

DURING the last five or six years woolen manufacture in March has shown a gain over January and this month is not likely to be an exception. News filtering in from several New England points indicates a better feeling and larger business among the woolen mills, and while the low prices on wools and their native wastes cannot be viewed as helpful to the woolen rag and reworked markets, there is little reason to suppose that manufacturers in the weeks to come can continue operations without generous purchases of rags and reworks.

Mill buying is on a restricted scale, but an unexpected call for brown knit resulted in several good sales at 9 to 9½c. Some interest is shown in light hoods around 11½, fine light merinos at 11c. and blue serges at 6½c. Graders are purchasing small quantities only of mixed softs, and are quite disinclined to grade to stock. The several white stocks are moving much more slowly, white knit holding steady at 25c.

The wool waste market in February made slow but decided movement toward better selling conditions and while the turnover was small as compared with other years it was about as good as might have been expected. The sagging wool market however can hardly be construed as favorable to better prices on substitute for wool.

The noil market opened March on a firm basis. Demand in February was fairly good on the finer noils and there were also indications that the low-priced crossbreds were coming in for larger attention. The uncertain factor in the situation is the degree of balance that will develop between the worsted producing section and the woolen consuming division. If woolens show a much larger relative increase in activity than worsteds, the decreased supply of worsted wastes may bring about a strong market for noils and similar substitutes. Output of noils still favors the fine qualities. Colored noils are neglected. Stocks are small. Specialty noils are firm but slow in demand.

◆ Thrown Yarn Prices Soft; Spun Steady

SPUN silk yarns are steady, with buying limited to immediate requirements, and prices holding firm. Broadsilk manufacturers are moderately confident regarding prospects for shantung fabrics, but they are less disposed to stock up on yarns, and orders show a gradual lessening, especially the futures. Yarn moves regularly, however, and spinners regard the outlook for the rest of the season as promising. No further spurt of any size is expected, and the industry is resigned to finishing the season at current prices.

Thrown silk is quiet. Yarn demand slumped this week, which may be due to the Philadelphia strike having cut down hosiery production in that area. Broadsilk weavers buy lightly; throwsters hope for a pick-up in demand from these mills toward the end of the month by which time it is expected that summer fabrics will have taken a real hold. Yarn prices are soft, and some throwsters make concessions to effect turnover.

◆ Raw Silk Demand Chiefly Spot

RAW silk tone is confident, despite easing of prices. Buying is not too strong; inquiries are increasing, and there is moderate spot call from broadsilk manufacturers. Hosiery knitters are beginning to place business, but only on a small scale as yet. Consuming industries seem convinced that silk is due for a sharp recession toward summer, and all groups hold off on future commitments in hope of better buying later. Demand for raw silk normally declines at the end of April, and it may be assumed that May will bring a scaling down of quotations; importers, while agreeing this is virtually certain, do not look for any pronounced slump. They are fairly satisfied with current outlook; the chief need, from their point of view, for the next few weeks, is a steady market, and indications are they may get their wish in that respect.

February figures, showing a total of 54,242 bales delivered to American mills, had a bullish influence, but this was largely offset by the figures for January which had been decidedly below expectations. The two months equalized each other, with the result that prices have changed little since the February figures came out.

The market makes slow but steady progress. A continued firming in Yokohama has resulted from the curtailment of output there; most filatures have observed the mandate to close for the month of March, advices state. New York importers find Yokohama tone considerably stronger than that prevailing in their own markets, and they are obliged to do some bargaining to get prices which will yield adequate margin.

Silk stocks in New York are moderate. Shortage of several 20/22s is reported by a few firms.

◆ Meager Rayon Profit Forces Economies

THE rayon industry presents a picture of high-pressure buying and meager profits. Current volume is very encouraging in itself; both 150s and 100s move spiritedly and producers cannot fill orders on the most popular numbers. Deliveries are two to four weeks behind. However, the recent price cut so pared down profit margin that producers complain more and more of this aspect. The pressure has become acute in some instances, and rayon companies are adopting economies in their plants to cut overheads.

It is pretty well accepted that the increased volume has not compensated for the price cut, and it is unlikely that in the brief period remaining this season, volume will increase sufficiently to have any appreciable effect on overhead. The outlook on this score is uncertain, not to say hazardous. Certain producers are understood to be facing difficulties and there are reports of pending liquidations. As usual in such instances, the firms with the best financial resources are in the strongest position. The present practice—for some firms—of selling actively at inadequate profit, cannot continue indefinitely, and it promises to bring a show-down before long. It is obviously a matter of survival of the fittest—or at least, of the strongest.

Growing Call for 100s

Current buying shows a trend to 100 multifilament yarns; cotton weavers are buying these numbers actively for production of rayon flat crepes, and demand exceeds supply. Producers have increased their output somewhat, but certain preferred yarns are still scarce. The scarcity of 150s noted during recent weeks, has abated somewhat, due partly to increased output and partly to diminshed demand. Current orders for 150s, excepting 150/60, are now about normal, producers report; manufacturers are obliged to wait two weeks for deliveries on 60-filament.

There has been a sharp spurt in the production of rayon flat crepes stimulated no doubt by the low yarn prices, and rayon producers themselves are not especially happy on this score; they see a danger of overproduction which would

necessarily have an unhealthy effect on the credit of their customers. It is significant that several manufacturers who had specialized in rayon linings, have turned over to rayon flat crepe production. So far, the rayon flat crepes being offered are mostly of good quality. The "quality plan" requirements of the Viscose Co., of course, help much to maintain the standard in that respect.

"Obsolete" yarns continue moving actively. Hosiery mills are showing much interest at this end, for the production of low-priced lines. The higher-priced mills specializing in better quality rayon hosiery buy first-grade yarns. There does not seem to be any immediate propsects of exhausting the supply of "obsolete" yarns, in spite of very active sales; indeed, there were reports in the market this week that some producers had actually resumed manufacture of these yarns, to take advantage of current sales impetus. The advantage of such a move is doubtful, since these yarns sell at 65c. and less.

◆Am. Woolen Surplus Further Reduced

American Woolen Co. reports for the year ended Dec. 31, 1930, deficit of $3,405,250 before depreciation, and after deducting $1,492,334 for this charge, a net reduction from surplus of $4,897,584. This compares with deficit after depreciation in 1929 of $4,228,190, and a deficit of $1,262,263 in 1928. The company's income account for the year compares as follows:

	1930	1929	1928
Net loss	$3,405,250	$2,293,989	†$694,334
Depreciation	1,492 334	1 934,201	1,956,597
Deficiency for year	4,897,584	4,228,190	1,262,263
Previous surplus	9,684,970	13,913,161	15,175 425
Total surplus	4,787,386	9,684,971	13,913,162

†Profit.

Balance sheet as of Dec. 31, 1930, discloses working capital of $56,414,214 compared with $58,456,053 the year before. Of the current assets, cash increased $7,744,656, and U. S. Government securities, $7,119,297; accounts receivable decreased $10,307,546 and inventory account $8,852,619. The latter now stands at $19,801,708 as compared with $46,148,309 on Dec. 31, 1928.

In his report to stockholders, President L. J. Noah said in part:

"As I became president of your company on Feb. 2, 1931, and am, therefore, writing this report after less than a month in office, I am not in position to comment at length upon the operations for 1930.

"In general the factors responsible for the $4,897,584 deficit, were similar to those effective in 1929, but in aggravated degree. The world-wide decline in raw wools persisted, carrying many wools to lower than pre-war levels; falling raw materials and the general business depression caused a sharp contraction in sales that brought manufacturing operations below an average of 50% capacity; and, finally, the unsettled conditions toward the year-end resulted in abnormally high credit losses.

"Directors and your management are well aware of the gravity of the extended and unparalleled depression in the woolen and worsted industry, and of its effect upon the fortunes of the company of late years. Regardless of whatever adjustments the process may entail, we intend to conduct the business to conform to the changed demands and merchandising conditions that have developed during the past seven years.

"To cooperate in the execution of our merchandising and manufacturing plans, stockholders are asked at the annual meeting to approve an amendment in by-laws to permit the formation of an actively functioning executive committee of six. The chairman of this committee will be William B. Warner, president of the McCall Corp., publishers of *McCall's Magazine*, and designers and distributors of the well-known McCall patterns. He is an authority on modern merchandising methods and clothing styles. Associated with him will be your president and Moses Pendleton, vice-president and general manager in charge of operations. In addition, the committee will include Albert H. Wiggin, Ray Morris and Charles Hayden, whose combined banking experience will bring to the management the benefits of their long association with varied and successful businesses organized to meet modern merchandising needs.

"Predictions for the coming year would at this time be valueless. The policies of the company will be adapted solely to securing the largest possible sales volume at the utmost efficiency. Working capital is ample to take care of maturing obligations and any probable expansion of production. Of great advantage too, is the most favorable inventory position in years,—$19,801,707, against $46,148,309 only two years ago, —which puts the company in position to take advantage of any favorable trade developments."

Manville Jenckes Co. to Continue

A further step toward the reorganization of Manville Jenckes Co. was taken March 10, when the Superior Court of Rhode Island, at the joint request of interests representing the principal stockholders and creditors, appointed Zenas W. Bliss of Providence, R. I., and George R. Urquhart, of Hempstead, L. I., as receivers in Rhode Island to succeed Messrs. Bliss and Dexter Stevens, who have been acting as temporary receivers since Feb. 27, 1931. In the ancillary proceedings pending in North Carolina, Messrs. Bliss, Stevens and John A. Baugh will continue to act as temporary receivers until March 20, on which date the North Carolina Court will be requested to appoint Messrs. Bliss, Urquhart and Baugh as ancillary receivers there.

The receivership proceedings, both in Rhode Island and North Carolina, have been brought for the purpose of facilitating a reorganization of the affairs of the company and it is anticipated that such a reorganization will be effected without undue delay. The interests affected are working harmoniously to this end. There has been no suspension of the company's business and new orders of substantial amount, both for immediate and future delivery, have been accepted by the receivers.

The operation of the company will continue under the direction of Dexter Stevens, president.

Real Silk Income $1,006,123

Real Silk Hosiery Mills, Inc., Indianapolis, report earnings for the year ended Dec. 31, 1930, as $132,759 after all charges and taxes, which compares with $2,026,456 in the previous year. The $132,759 figure is after charging of $873,364 on commitments on the Raw Silk Exchange. The directors declared a 10% stock dividend for 1931 on the common in lieu of cash dividends, payable 2½% quarterly, subject to approval by stockholders, increasing the common from 200,000 to 300,000 shares at the annual meeting March 26. The added stock is to be used only for payment of stock dividends.

The income before depreciation was $1,684,958, against $2,739,735 in 1929. Net income after interest and taxes was $1,006,123. The surplus was reduced from $5,019,240 on Dec. 31, 1929, to $4,074,707.

Celanese Shows Profit

The Celanese Corp. of America reports for the year ended Dec. 31, 1930, net profit of $1,919,950 after charges, equal after preferred dividends to about 8 cents per share on the common stock outstanding at the end of the year. This compares with a net profit of $2,952,321, or $1.11 per common share, in the preceding year. Balance sheet as of Dec. 31, 1930, shows current assets of $12,224,062 and current liabilities of $1,095,758, leaving working capital of $11,128,304, as compared with $15,885,734 a year ago.

Kendall Co. Reports Loss

Kendall Co., operating cotton mills in the North and South, reports for the year ended Dec. 27, 1930, net loss of $258,850, as compared with a net profit in the previous year of $644,776. In reporting to stockholders, President Henry P. Kendall stated that in terms of units 1930 sales compared favorably with any previous year, although dollar volume was less than in 1929. Balance sheet at the close of 1930 showed working capital of $5,223,866, or $477,483 less than at the end of 1929.

Merrimack Mfg. Shows Loss

For the year ended Dec. 31, 1930, Merrimack Mfg. Co., Lowell, Mass., and Huntsville, Ala., reports a loss after all charges of $2,157,607, compared with profits of $507,885 in 1929, and $1,307,581 in 1928. After crediting $1,858,092 from inventory and contingency reserves and charging $152,447 for dividends and investment reserves, there was a net debit to profit and loss account of $451,961 in 1930. Gross sales of $4,829,113 in 1930 compare with $9,556,631 in 1929 and $12,254,819 in 1928; in yardage the amount sold in 1930 totaled 59,951,522 against 57,433,884 yards in 1929.

Boston Stock Auctions

The following sales of textile shares were made at auction Wednesday, March 4:

Shares	Mill	Par	Price	Chge.
4	Androscoggin	100	59	— 5½
5	Pepperell	100	79¼	+ 2¼
3	Amoskeag Mfg. (old common)	100	60	—10
40	Associated Textile	...	35–36½	.....
6	Plymouth Cordage	100	69	+ 3
10	Ludlow	...	115	— 2½
2	Nashua, com	100	7½	— 3¼
70	Total			

QUOTATIONS

at close of business, Mar. 11, 1931
Prices cover average qualities unless otherwise stated

Cotton Goods

	Mar. 11	Mar. 4	Mar. 12 1930
PRINT CLOTHS			
27 -in., 64x60, 7.60	3¾–4 c.	3¾–4 c	4¼–4⅜c
38½-in., 64x60, 5.35	5½–5⅝c.	5½–5⅝c.	6–6¼c.
39 -in., 68x72, 4.75	6½–6⅝c.	6½–6⅝c.	7
39 -in., 72x76, 4.25	7¼–7½c.	7 –7½c.	8
39 -in., 80x80, 4.00	7½–7¾c.	7½–7¾c.	8¼c.
BROWN SHEETINGS			
36-in., 56x60, 4.00	5¼c.	5¼c.	7½c.
36-in., 48x48, 3.00	6¼c.	6¼c.	9 c.
37-in., 48x48, 4.00	5¼–5½c.	5¼–5½c.	6¾c.
PAJAMA CHECKS			
36½-in., 72x80, 4.70	6¾c.	6¾c.	7½–7⅝c.
36½-in., 64x60, 5.75	5¾c.	5¼c.	6¼c.
MISCELLANEOUS			
Drills, 37-in., 3 yd	6¾c.	6¼c.	9 c.
Denims, 2.20	12 c.	12 c.	15c.
Tickings, 8 oz	15½c.	15½c.	19½c.
Standard prints	7½c.	7½c.	9½c.
Eastern staple ginghams, 27-in	8 c.	8 c.	10 c.

Cotton Waste

Peeler comber	9 – 9½
Peeler strips	8 – 8¾
Sak. comber	8½– 9
Choice willowed fly	3¾– 4¼
Choice willowed picker	3 – 4
Sak. strips	10 –10½
Linters (mill run)	2¼– 3¼
White spooler (single)	7 – 7½

Cotton Yarn

CARDED (Average Quality)

Double Carded 2c.–4c. higher according to quality

SINGLE SKEINS OR TUBES (Warp Twist)

4s to 8s	$0.18½	22s	$0.23
10s	– .19	24s	– .24
12s	– .19½	26s	– .25
16s	– .20½	30s	– .26
20s	– .21	40s ex. qual.	– .37

TWO-PLY SKEINS AND TUBES

8s-2	$0.18½	26s-2	$0.24½
10s-2	– .19	30s-2	.25 – .25½
12s-2	– .19½	36s-2	– .31½
14s-2	– .20	40s-2	– .33½
16s-2	– .20½	40s-hi.brk.	– .37
20s-2	– .21	50s-2	– .41
24s-2	23½– .24	60s-2	– .51

SINGLE WARPS

10s	$0.19	24s	$0.24 – .24½
12s	– .19½	26s	– .25
14s	– .20	30s	– .26
16s	– .20½	40s.ex.qual	.37 – .38
20s	– .21		

TWO-PLY WARPS

8s-2	$0.19	24s-2	.24
10s-2	– .19½	26s-2	– .25
12s-2	– .20	30s-2	.25½– .26
14s-2	– .20½	40s-2 ordin.	– .34
16s-2	.20½– .21	50s-2	– .42
20s-2	.21 – .21½	60s-2	– .52

8s-3 and 4-ply skeins and tubes; tinged, 17-17½; white, 18½; waste, 16½

HOSIERY CONES (Frame Spun)

8s	–$0.18½	22s	–$0.22
10s	– .19	24s	– .23
12s	– .19½	26s	– .23½
14s	– .20	30s tying	– .25½
16s	– .20½	30s reg	– .26
18s	– .21	30s ex.qual.	– .29
20s	– .21½	40s	– .34

COMBED PEELER (Average Quality)

TWO-PLY—(Knitting Twist) Cones

20s-2	$0.34 – .35	60s-2	$0.54 – .55
30s-2	.38 – .39	70s-2	.64 – .65
36s-2	.40 – .41	80s-2	.74 – .76
40s-2	.42 – .43	90s-2	.90 – .93
50s-2	.47 – .48	100s-2	1.10 –1.15

WARPS, SKEINS AND CONES

TWO-PLY—(Warp Twist)

20s-2	$0.35	60s-2	$0.55
30s-2	– .40	70s-2	– .65
36s-2	– .41	80s-2	.75 – .77
40s-2	– .43	90s-2	.92 – .95
50s-2	– .48	100s-2	1.12 –1.17

SINGLES

12s	$0.27½– .28	30s	$0.36½– .37
14s	.28 – .28½	38s	.39 – .40
16s	.28½– .29	40s	.4[illegible] – .41
18s	.29 – .29½	50s	.47 – .47½
20s	.30 – .30½	60s	– .54
24s	.31½– .32½	70s	– .63
28s	.35 – .36	80s	– .73

MERCERIZED CONES—(Combed, Ungassed)

26s-2	.50 $0.52	90s-2	–$1.29
30s-2	.52 – .54	100s-2	–1.59
36s-2	.55 – .57	120s-2	–1.99
40s-2	.58 – .60	30s	– .63
45s-2	.60 – .62	40s	– .68
50s-2	.62 – .64	50s	– .75
60s-2	.70 – .72	60s	– .83
70s-2	.82 – .84	70s	– .95
80s-2	.94 – .96	80s	1.15 –1.17

Cotton Prices and Statistics

FLUCTUATIONS OF FUTURES

	Closed Mar. 5	For Week High	For Week Low	Closed Mar. 11	Net Chge.
March	11.13	11.25	10.62	10.62	—.49
April	11.25	11.25	10.74	10.74	—.49
May	11.37	11.49	10.85	10.86	—.51
June	11.49	11.49	10.96	10.96	—.53
July	11.61	11.73	11.07	11.07	—.54
August	11.71	11.71	11.18	11.18	—.53
September	11.79	11.79	11.29	11.29	—.50
October	11.89	12.03	11.39	11.39	—.50
November	11.99	11.99	11.49	11.49	—.50
December	12.09	12.23	11.59	11.60	—.51
January	12.17	12.30	11.66	11.67	—.50
February	.....	.....	.....	.....	.....

SPOT FLUCTUATIONS FOR WEEK

(Middling)

	New York	New Orleans	Liverpool
Thursday, March 5	11.25	10.91	6.18
Friday, March 6	11.05	10.75	6.09
Saturday, March 7	11.00	10.69	5.94
Monday, March 9	10.95	10.64	6.02
Tuesday, March 10	10.85	10.51	5.94
Wednesday, Mar. 11	10.70	10.41	5.90

FOREIGN COTTONS

Egyptian Cotton

Alexandria Exchange, Mar. 10		Change
March Sak	17.37	—1.82
April uppers	12.37	—1.06

Mar.-Apr. Shipment c. i. f. Boston (Tariff not included)

Fully good fair Sak	20.00
Fully good fair to good Uppers	15.25

(By Anderson, Clayton & Co.)

Foreign cottons	F. O. B. New York, Cents
Peruvian Tanguis Strict Middling	22
Peruvian Pima No. 1	19
Peruvian Moderate Rough	15
Peruvian Full Rough	21
China Tientsin No 1	10¼
India Rough	7 to 10
India Smooth	7 to 10

(By Gerald G. Loeb, New York.)

BASIS MIDDLING

	Saturday, Mar. 7	Saturday, Feb. 28
10 markets average	10.38	10.58
Memphis	9.90	10.10

PREMIUM STAPLES

First Sales from Factors Tables at Memphis

Grade Strict Middling	Prices Steady
1⅛-in	12.65–12.90c.
1 3/16-in	14.25–14.50c.
1¼-in	19.00–19.25c.

CURRENT SALES

	For Week	Prev. Week	Week Before
Memphis total	12,994	15,986	19,108
F.o.b. included in total	9,769	11,843	12,548
10 markets	46,547	71,916	82,024

MEMPHIS RECEIPTS, SHIPMENTS, ETC.

	For Week	Last Year	Year Before
Net receipts	4,726	12,117	13,738
Gross receipts	31,305	28,409	31,170
Total since Aug. 1, net	595,993	864,755	749,668
Shipments	36,804	38,160	46,109
Total since Aug. 1	987,433	1,371,388	1,350,201
Total stock	316,293	385,469	236,561
Decrease for week	15,499	9,751	14,945
Unsold stock in hands of Memphis factors	48,321	55,219	.....
Increase for week	1,098	986	.....

AVERAGE PRICE MAR.-APR. SHIPMENT HARD WESTERN COTTON

F.o.b. New England

	Middling	St. Middling
1 1/16-in	13 –13½c.	13½–14 c.
1⅛-in	13½–14c.	14½–14¾c.
1 3/16-in	15½–16c.	16½–16¾c.
1¼-in	20 –22c.	22 –24 c.

Basis on New York, May 10.95c.

SPOT FLUCTUATIONS AND STOCKS

Markets	Middling Mar. 4	Middling Mar. 11	Sales	Stocks This Week	Stocks Last Year
Galveston	11.15	10.65	3,465	601,374	325,726
New Orleans	10.97	10.41	6,185	800,572	476,675
Mobile	10.40	9.90	2,963	241,195	28,145
Savannah	10.83	10.27	2,074	364,858	58,789
Norfolk	11.00	10.50	577	88,548	58,864
New York	11.30	10.70	1,715	229,310	96,225
Augusta	10.75	10.19	1,946	106,955	89,477
Memphis	10.15	9.60	16,069	309,897	382,999
St. Louis	10.00	10.00	.....	12,643	13,431
Houston	11.15	10.60	10,724	1,302,222	905,578
Dallas	10.60	10.05	9,387	16,695	12,170

DIFFERENCES ON AND OFF MIDDLING

WHITE GRADES

	Dallas	Memphis	Montgomery	Augusta	Average
M.F	.75†	1.00†	.85†	.75†	0.87†
S.G.M	.60†	.75†	.75†	.63†	.70†
G.M	.50†	.50†	.60†	.50†	.51†
S.M	.35†	.25†	.35†	.25†	.30†
S.L.M	.60*	.75*	.65*	.50*	.55*
L.M	1.35*	1.50*	1.50*	2.25*	1.32*
S.G.O.**	2.25*	1.75*	2.50*	3.50*	2.11*
G.O	3.25*	2.00*	3.50*	4.50*	2.77*

YELLOW TINGED

G.M	0.50*	0.75*	0.50*	0.50*	0.58*
S.M	1.00*	1.25*	1.00*	1.00*	0.98*
M.**	1.75*	1.50*	1.50*	1.50*	1.50*
S.L.M	2.50*	1.75*	2.25*	2.25*	2.09*
L.M.**	3.50*	2.00*	3.00*	3.00*	2.77*

YELLOW STAINED

G.M	1.50*	1.75*	1.50*	1.50*	1.5
S.M.**	2.25*	2.00*	2.50*	2.50*	2.1
M.**	3.00*	2.50*	3.50*	3.50*	2.8

BLUE STAINED

G.M.**	1.75*	1.50*	1.75*	1.75*	1.53*
S.M.**	2.25*	1.75*	2.75*	2.75*	2.08*
M.**	3.00*	2.25*	3.75*	3.75*	2.80*

**Grades not deliverable on contract. †On Middling *Off Middling.

Wool

OHIO, PENNSYLVANIA AND WEST VIRGINIA (IN GREASE)

Fine delne..	$0.29 –$0.30	¾ blood.....	$0.24 –$0.25
Fine clthg...	.23 – .24	½ blood.....	.24 – .25
¼ blood.....	.27 – .28		

TEXAS AND CALIFORNIA (CLEAN BASIS)

Texas, 12 months	$0.61 –$0.63
California, Northern	.57 – .59

PULLED—EASTERN (CLEAN BASIS)

A.A.	$0.68 –$0.70	B-Super...	$0.45 –$0.50
A-Super....	.52 – .55	C-Super...	.38 – .40

MONTANA, IDAHO AND WYOMING (CLEAN BASIS)

Staple fine	$0.65 –$0.68
Staple ½ bld.	.60 – .62
Fine and fine medium	.58 – .60
¾ blood	.49 – .52
½ blood	.43 – .45

MOHAIR—DOMESTIC

Best carding	$0.28 –$0.30
Best combing	.42 – .45

MOHAIR FOREIGN (IN BOND)

Turkey fair, average	$0.12 –$0.15
Cape firsts	.12 – .15

FOREIGN CLOTHING AND COMBING (CLEAN BASIS IN BOND)

Australia:	
70s	$0.48 –$0.50
64s	.41 – .43
58s-60s	.38 – .40
(IN GREASE)	
Montevideo:	
58s-60s	0.18 –$0.19
56s	.17 – .18
50s	.16 – .17
Buenos Aires:	
4s, 40-44s	$0.13 –$0.14
5s, 36-40s	.11 – .12

FOREIGN CARPET (GREASE BASIS IN BOND)

Aleppo	$0.21 –$0.23
China: Combing No. 1	.11 – .13
China Filling Fleece	.10 – .12
Szechuen ass't.	.11 – .13
Cordova	.11 – .13
Scotch black face	.14 – .15
East India: Kandahar	.18 – .20
Vican'r	.23 – .24
Joria	.21 – .23

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s 36s	$0.75 –0.80
2-24s 40s	.85 – .87½
2-26s 44s	.87½ – .90
2-28s 46s	.95 – .97½
2-30s 48s	1.00 –1.02½
2-32s 50s	1.05 –1.07½

(Single yarns 5c. less than above)

2-36s, 58s	$1.25 –1.27½
2-40s, 60s	1.30 –1.32½
2-40s, 64s	1.35 –1.37½
2-50s, 66s	1.50 –1.52½
2-60s, 70s	1.90 –1.95

ENGLISH SYSTEM KNITTING

2-20s, 44s in oil	$0.77½–0.80
2-20s, 48s in oil	.82½– .85
2-20s, 50s in oil	85 – .87½
2-20s, 56s in oil	.97½–1.00
2-20s, 60s in oil	1.15 –1.17½
2-20s, 64s in oil	1.25 –1.27½
1-15s, 46s dyed	.... – .97½
1-15s, 48s dyed	.... –1.00
1-15s, 50s dyed	.... –1.02½

(Oil yarns 17½c. less)

FRENCH SYSTEM

1-20s, 58s	$1.10 –1.12½
1-20s, 60s	1.15 –1.17½
1-18s, 64s, dyed	1.40 –1.42½
1-26s, 64s	1.20 –1.22½
1-30s, 60s, Warp	1.22½–1.25
1-30s, 64s, Warp	1.25 –1.27½
2-30s, 64s, Fancy mixes	1.50 –1.52½
2-40s, 64s, Zephyrs	1.40 –1.42½
1-50s, 66s	1.47½–1.50
2-50s, 66s	1.62½–1.65
1-60s, 70s	1.80 –1.85
2-60s, 70s	1.90 –2.00

FRENCH SPUN MERINO WHITE

1-30s, 50-50-58s on cops	$1.00 –1.02½
1-40s, 50-50-60s on cops	1.15 –1.17½
1-40s, 50-50-64s on cops	1.17½–1.20
1-40s, 50-50-64s Australian cops	1.20 –1.25

Underwear mixes, 3c. additional.
Solid color, 35c. additional.

◆

Tops and Noils

TOPS—BOSTON

Fine (64-66s)	$0.85–$0.88
Half-blood (60-62s)	.80– .82
High ¾ blood (58s)	.65– .70
Aver. ¾ blood (56s)	.63– .68
Low ¾ blood	.60– .62
High ½ blood (50s)	.55– .58
46s S. A. and N. Z.	.51– .53
44s S. A. and N. Z.	.50– .52
40s S. A. and N. Z.	.48– .50

TOPS—BRADFORD, ENG. (MAR. 6)

Fine (70s)	27 d	¾ bld. (56s)	17 d
Fine (64s)	24 d	½ bld. (50s)	14 d
½ bld. (60s)	22½d	Cross-bred (46s)	11½d
¾ bld. low (58s)	19 d		

NOILS—BOSTON

Fine	$0.43–$0.45	High ½ bld.	$0.31–$0.33
Half-bld.	.38– .42	Low noils	.31– .33
Aver. ¾ bld.	.33– .35	Medium colored	.25– .28
Fine colored.	.32– .35		

Wool Substitutes

WOOL WASTE

Lap, fine white	$0.68 –$0.70
Lap, fine colored	.48 – .52
Hard ends, fine white	.51 – .53
Hard ends, ½ blood white	.33 – .35
Hard ends, fine colored	.25 – .27
Hard ends, medium colored	.18 – .20
Card, fine white	.25 – .28
Burr, fine Carbonizing	.30 – .33

OLD WOOLEN RAGS (GRADED FOR MFRS.)

Merinos, Coarse Light	$0.04½–$0.05½
Merinos, Fine Dark	.04 – .04½
Merinos, Fine Light	.11 – .12
Serges, Blue	.06 – .06½
Serges, Black	.06 – .06½
Serges, Red	.08 – .09
Knit, White	.25 – .26
Knit, red	.11 – .12
Knit, Light Hoods	.12 – .13
Worsted, Light	.05½– .06
Worsted, Blue	.06½– .07
Worsted, Black	.06½– .07

Silk Yarns

THROWN SILK (60 day basis)

	Nominal
Japan organzine, 2 thd. spec. gd. XX. sk. 85%.	$4.30
Japan organzine, 2 thd. sp. crack. sk. 81%.	3.90
Japan crepe, 3 thd. gd. XX bob. 83%.	4.05
Japan crepe, 3 thd. sp. crack. bob. 81%.	3.95
Japan crepe, 4 thd. crack bobbins, 78%.	3.85
Japan grenadine, 4 thd. sp. grand singles, 87%	5.90
Japan grenadine 4 thd. 85%.	5.60
Japan grenadine 3 thd. 90%.	6.90
Canton crepe, 3 and 4 thd. ns. 14/16 on bobbins	2.65
Hosiery tram, 3 thd. Japan 90%.	4.95
Hosiery tram, 5 thd. Japan, 85%.	4.00
Hosiery tram, crack XX 78%.	3.35

SPUN SILK YARNS (Terms: net 30)

40/2	$3.15	60/2	$3.35
50/2	3.25	62/1	2.35

Raw Silk

(60 day basis)

	13/15 White	20/22 White	20/22 Yellow
Super Grand, 86/88%	$3.65	$2.80	$2.80
Special Grand, 85%	3.20	2.75	2.75
Grand XX, 83%	2.90	2.60	2.60
Special Crack, 81%	2.77½	2.65	2.65
Crack XX, 78%	2.70	2.55	2.55
Extra Extra, 73%	2.55	....	....
Best Extra, 68%	2 50	....	....

Canton filature, new style, 14/16	$1.65
Canton filature, new style, 20/22	1.50
Tussah filature, 8 cocoon	1.15

NATIONAL RAW SILK EXCHANGE

	Close Mar. 4	For the Week High	For the Week Low	Close Mar. 10	Net Chge.
March	2.60	2.63	2.53	2.61	+.01
April	2.57	2.57	2.46	2.55	—.02
May	2.49	2.52	2.44	2.47	—.02
June	2.47	2.48	2.41	2.44	—.03
July	2.47	2.48	2.39	2.43	—.04
August	2.45	2.48	2.39	2.39	—.06
September	2.44	2.47	2.38	2.39	—.05
October	2.44	2.47	2.36	2.40	—.04

Total contracts, 513. Total number of bales, 5,130. Total approximate value $13,185. Trading unit crack XX 13/15 white 78%.

Domestic Rayon

VISCOSE PROCESS

Denier	Filament	First Qual.	Second Qual.
50	14	$2.15	$1.95
75	18–30	1.35	1.25
100	18–40	1.10	1.00
125	36–50	1.00	.90
150	30	.70	.67
150	40	.75	.72
150	60	.85	.82
150	75–90	.85	.82
170	24–27	.75	.72
170	60	.85	.82
200	30	.75	.72
200	35–42	.75	.72
300	42–62	.63	.60
450	54–60	.63	.60
600	72–96	.63	.60
900	100–144	.63	.60

NITRO-CELLULOSE PROCESS

Denier	First Qual.	Second Qual.	Denier	First Qual.	Second Qual.
75	$1.35	$1.25	150	$0.75	$0 72
100	1.05	.95	175	.75	.72
125	.95	.85			

CUPRAMMONIUM PROCESS

Denier	Filament	Price	Denier	Filament	Price
15	24	$3.10	65	45	$2.00
25	24	2.85	80	60	1.70
30	24	2.60	100	75	1.35
40	30	2.40	120	90	1.22
52	30	2.20	150	112	1.10
			180	135	.97

ACETATE PROCESS

Denier	Price	Denier	Price
45	$2.25 2.75	120	$1.90
55	2.05–2.55	140	1.30
65	2.45	150	1.40–1.85
75	1.80–2.70	200	1.55
100	1.65–2.45	300	1.50

Rayon Waste

Open bleached waste	$0.13½–$0.14½
Open unbleached waste	.11
Bleached thread waste (mfs.)	.10
Bleached thread waste (misc.)	.05– .07
Colored thread waste	.04
Colored clips	.04

CONVERTED RAYON WASTE

Bleached tops	$0.31–0.34
Unbleached tops	.30
Bleached noils	.12
Bleached garnetts	.13
Unbleached garnetts	.14
Colored garnetts	.12

Silk Waste

Kibisso Kakai Grand XX	$0.54
Kibisso Kakai Triple Extra	.48
Frison Grand Double	.52½
Pierced Cocoons	.53

THE READING PORTABLE CENTRIFUGAL EXTRACTOR

The "Reading" is but 28 in. in diameter and is mounted on fixed wheels and a caster to permit easy handling from one department to another. The machine consists essentially of an 18 inch bronze Basket driven by an Underslung Motor, Centrifugal Clutch, and a Built-in Mechanical Brake for bringing the basket to rest quickly after current is cut off. All moving parts are enclosed in a Monel Metal Casing.

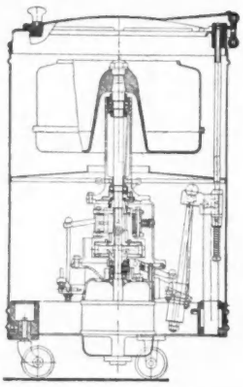
The method of mounting is unique and important, in that the entire working unit is carried on free-swinging suspension rods, the support brackets for which are attached to the vertical posts.

In response to a long-felt need in many industries for a small, high-speed portable dryer of the centrifugal type, Textile Machine Works has designed and developed a compact, efficient extractor with an almost unlimited range of uses.

The "Reading" is in no sense a washing machine type of dryer, but a safe, rugged extractor built for long and continued service in industrial establishments. While its capacity is small, the "Reading" can be loaded, operated and emptied with such rapidity that it is actually a *production* machine.

These advantages will undoubtedly prove of great value to textile finishers, dye works, laundries, chemists and the process industries. Special baskets for various requirements will be furnished on order. The wet load should not exceed 45 pounds.

The construction, operating principles and safety features of this extractor are explained in detail in a recently issued bulletin. At your request we will forward you a copy at once—the coupon is for your convenience.



By means of this special arrangement embodying a fixed basket and three-point free suspension, automatic self-centering of the driving apparatus is secured, thus reducing vibration to a negligible amount and preventing the machine from "creeping".

A compactly arranged panel located on the side of the casing contains the start and stop levers, current tell-tale, push contact for power cord, motor switch, and a central Alemite greasing station.

TEXTILE MACHINE WORKS
Reading, Pennsylvania

Textile Machine Works, Reading, Pa.
Dept. F

Please send Bulletin covering The Reading Centrifugal Extractor to

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Street..... *City*.....

Trade Discusses Stillwater Move

From TEXTILE WORLD'S *New England Office*

COMMENT on the minimum wage plan advanced by Stillwater Worsted Mills is guarded and most manufacturers prefer to think over the whole problem before expressing opinions. It is evident from some of the comments, however, that a few have jumped to conclusions without a thorough understanding of what was back of Austin T. Levy's suggestion as detailed in last week's issue. This is particularly true of those who state that the minimum wages do not represent a fair return to skilled textile operatives. It is Mr. Levy's contention that there are certain operations in a mill which cannot be called skilled work, and if these jobs are paid at a minimum rate the usual additional compensation for skill will still prevail. Mr. Levy has no intention of having the minimum rates used for anything but as a uniform unskilled labor basis to which the usual increments for skill would be added. He believes that if the basis is the same in many mills the superstructure of wages will be more uniform.

A few comments have also been heard to the effect that the budget of $81.92 per month for a family of four reflects poor living conditions in New England mills. Mr. Levy points out that the budget represents the lowest level possible and his purpose in publishing it was to show that, *even* with the budget on a bare subsistence basis, textile wages did not leave much for the purchase of clothing. The budget was purposely made low to emphasize this fact.

All told, the airing of the wage situation in the woolen and worsted industry has stirred up considerable discussion. The majority in the industry believe that Mr. Levy has made a forward step, but prefer to think over further the practicality of the plan. At least Mr. Levy is given credit for having the courage of his convictions in going ahead and establishing the minimum wages in the Stillwater plants.

Combed Yarn Mills to Cut Night Work

(Continued from page 34)

materially increased as a result of the change to full daytime operation. There were some spinners who stated that they could not adopt the new policy in their mills until April or May, but declared that it would be placed into effect as soon as practicable.

Another resolution adopted by members of the Gaston County Textile Manufacturers Association extended the congratulations of that organization to The Cotton-Textile Institute and the cotton manufacturers of the United States for "the notable success achieved in the great voluntary movement looking to the discontinuance of night employment of women and minors under 18 years of age." Figures released earlier in the week indicated that approximately 82% of the cotton spinning spindles in the combed yarn group had subscribed to the policy as recommended by the Institute.

S. A. Robinson, president, the Gaston County Textile Manufacturers Association, was named chairman of the general conference held at the Armington Hotel. E. L. Starr, director and treasurer, Durene Association of America, made a brief talk in which he described the progress of his organization's advertising and sales promotion campaign.

Outerwear Convention Set For April 13-14 in Philadelphia

With the announcement this week that the annual directors' meeting and convention of the National Knitted Outerwear Association would be held Monday and Tuesday, April 13 and 14 at the Benjamin Franklin Hotel, Philadelphia, another important session was added to the textile calendar for that week in Philadelphia. The Knitting Arts Exhibition will be held there April 13 to 17, and outerwear manufacturers are anxious to attend this show.

The National Association of Hosiery and Underwear Manufacturers has announced that the annual convention of that body will be held Thursday, April 16, at the Commercial Museum.

Design Clinic Held in Boston

For the purpose of effecting a better cooperation of the activities of producers, distributors, artists and consumers, a style and design clinic was held in Boston, March 10, under the auspices of the committee on industrial and civic art, Boston Chamber of Commerce. Textile group was represented by designs by Lowell Textile Institute and the School of the Museum of Fine Arts. Miss Katherine Hooper, stylist, represented the producers and Miss Margaret Matson, Wm. Filene & Sons, represented the distributors, and commented on the designs.

Men's Wear Groups Meet At Institute

Men's wear woolen and worsted fabric groups met this week at the offices of the Wool Institute, Inc., New York. Recommendations concerning activities to be adopted by the institute as a whole were made. These are to receive consideration by the executive committee. Most of the activities suggested pertain to statistics and information on market trends.

Confer on Details of Wool Top Futures Market

Representatives of the Wool Associates of the New York Cotton Exchange met a dozen or more wool men topmakers and manufacturers at the Ritz-Carlton Hotel, Boston, Tuesday, March 10, at which time there was a protracted discussion covering plans for the efficient working of the wool top futures market sponsored by the exchange. A number of technical matters were cleared up entailing some changes in proposed rules and by-laws. The inspection bureau covering matters connected with inspection, grading, standards and variation from top standards will have its headquarters in Boston, while deliveries and receipts will be from warehouses in the established centers of the trade.

No Compromise in Upholstery Strike

Upholstery manufacturers in Philadelphia, numbering 28 mills, at whose plants a strike has been in progress for more than a month, held a meeting March 9 and decided to adhere to their policy of continuing the wage scale named in the arbitration award. This award decreed that while a study of the whole situation was being made, wages should be reduced 14%. Of the 28 mills representatives from 25 were at the meeting.

Union local No. 25 has been deprived of its charter in the United Textile Workers organization for failing to return to work in the upholstery mills as directed by Thos. F. McMahon, international head of the U.T.W. Majority of the workers in the local recently voted to continue the strike.

Philadelphia Hosiery Strike Promises Long Struggle

The actual scope and significance of the Philadelphia hosiery strike, now in its third week, continue a matter of speculation, but it is clear that the controversy is more extensive and more important that was first indicated. The strike was called by the American Federation of Full-Fashioned Hosiery Workers Feb. 16, and labor leaders claimed to have called out operators in 45 non-union mills. Representatives of the union, said they called the strike "primarily to bring about 'controlled production' in the industry"; they claim that low wages in non-union shops make it difficult for union shops, paying union scale, to compete and that the strike was decided on to prevent later reductions of wages in union plants by bringing the open shops into line.

Boston Wool Receipts

Receipts of domestic and foreign wools at Boston, also imports at Philadelphia and New York for the week ended Mar. 7, based upon data compiled by the Market News Service of the Bureau of Agricultural Economics, Department of Agriculture, follow:

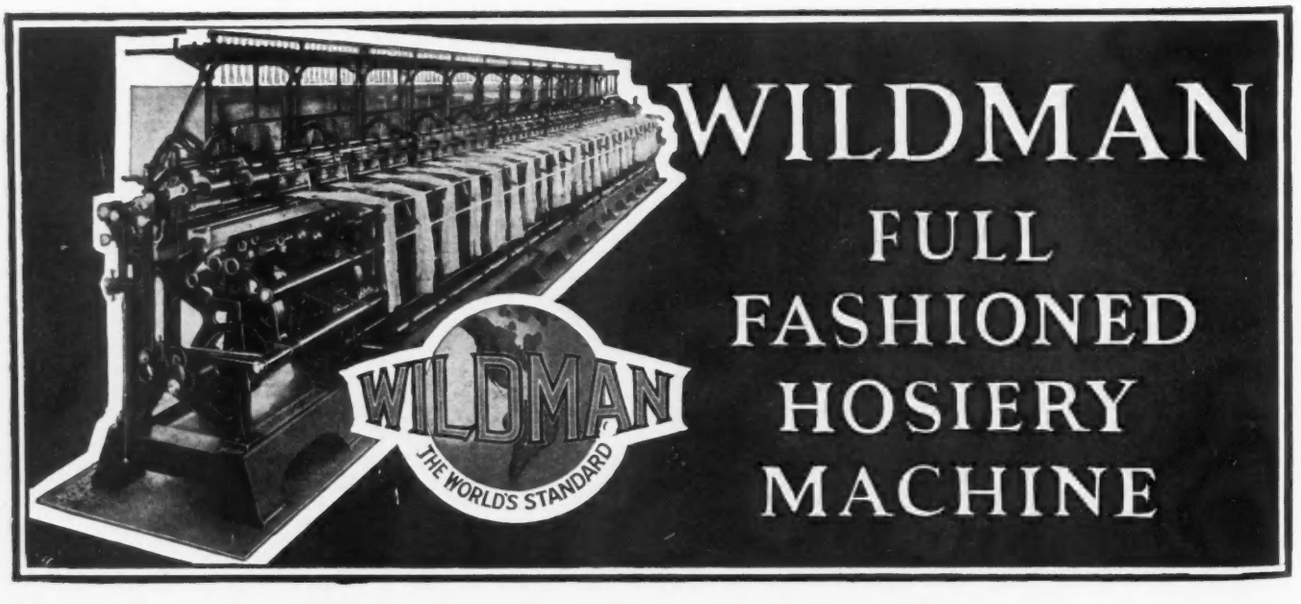
	Week Ended Mar. 7	Total to Date 1931	Total to Date 1930
Domestic.....	658,000	11,652,000	14,800,000
Foreign.....	394,000	10,214,000	17,376,000
Total.....	1,052,000	21,866,000	32,176,000
IMPORTS AT PRINCIPAL PORTS			
Boston.....	394,000	10,214,000	17,376,000
Philadelphia....	1,924,000	7,310,000	18,310,000
New York.....	1,470,000	10,321,000	12,941,000
Total.....	3,788,000	27,845,000	48,627,000

IN ONE SHAKE OF A LAMB'S TAIL

In the new Wildman Full-Fashioned Hosiery Machine, strong-arm methods are not required to operate the slow-motion mechanism. It is controlled by the mere touch of a lever. A child could operate it in two shakes of a lamb's tail—or possibly only one shake.

Write for further information.

WILDMAN MFG. CO.
FULL-FASHIONED DIVISION
NORRISTOWN, PA.



Worsted Spindle Inventory Begun

INDUSTRIAL Research Department of the University of Pennsylvania has begun work on its first inventory of worsted spinning spindles. This is an industry-wide survey covering spindles making yarn for the firm's own use as well as spindles producing for the sales yarn market.

The value of the survey will be in the additional light which it will throw on the capacity situation in worsted spinning. According to the Industrial Research Department the survey should reveal the following information:

1. Today's capacity, or the number of spinning spindles available for immediate operation. Not only for the industry, but for competing groups in specific yarn fields—weaving, knitting, carpet and rug. For instance, all spindles on weaving yarn are more or less in competition, whether producing for firm's own consumption, or the sales yarn market.
2. Potential capacity, or today's capacity plus idle mill spindlage and spindles not in place—always a threat to any stabilization of the market.
3. The spindlage available for shifting back and forth from sales to non-sales yarn.
4. The rate at which excess capacity is being eliminated through scrapping of spindles.
5. The excess spindlage existing in the industry over and above present peak demands.
6. The efficiency of present worsted equipment as it is measured by the number of large frames, and to some extent by the number of new spinning spindles.
7. When present spindles were installed, and the extent to which the war was a factor in creating present excess capacity.
8. The total yarn production of all worsted spinning spindles for the first time in the history of the industry. This means both sales yarn and yarn for firm's own consumption, by fields—weaving, knitting, carpet and rug, et cetera—for 1929 and 1930. These figures tied in with the Department's study "Analysis of the Production of Worsted Sales Yarn" will give the trends in weaving and knitting yarn production from 1919 to 1931.

The department states that, "There is no doubt that the value of this inventory would be enormously greater, had similar inventories been taken in previous years. In other words, figures for a single year do not reveal trends. That is why the department is planning to make this inventory the first of a series of annual or biennial worsted spinning inventories.

"Once the initial job in which the department is now asking the industry's cooperation has been done, it will be a comparatively easy task for both industry and the department to bring the inventory up-to-date.

"The results of the survey will be analyzed by the Industrial Research Department in a series of releases. Publication will be made as quickly as possible after the inventory schedules have been filed with the Department. As usual, these releases will deal only with the industry totals and never in such a fashion as to reveal the operations of an individual mill or company."

Franklin W. Hobbs, president of the National Association of Wool Manufacturers stated that, "We believe this survey will be of great value to the entire industry and, as far as we know, no such inventory has been made, at any rate, in recent years. We hope that you will carry out this work and if we can be of any assistance to you in obtaining the necessary information we shall be glad to help you in any way possible."

R. I. Section A.A.T.C.C. Holds Joint Meeting with American Chemical Society

The March meeting of the Rhode Island Section of the American Association of Textile Chemists and Colorists was a joint meeting with the American Chemical Society. It was held on the eveing of March 12 at the Jesse Metcalf Chemical Laboratory, Brown University, Providence, R. I., Professor Harned, of Yale University, spoke on "Dissociation of Weak Electrolytes in Salt Solutions."

There was an informal dinner at 6:30 p.m. at the Faculty Club preceding the meeting. A. Newton Graves, Franklin Process Co., Providence, R. I., is secretary of the Rhode Island Section.

Rotary International Promoting Special Conferences on Wool and Cotton

The commercial machinery of four great industries—cotton, wool, leather, and iron and steel—will be discussed critically by Rotarian representatives of these industries who are in attendance at the annual convention of Rotary International which is to be held in Vienna, Austria, next June. Separate assemblies for those members engaged in these four industries will be held in order to discuss problems and difficulties originating from the producer up through to the consumer.

An experimental assembly was held on the wool industry during the Rotary convention in Chicago last June, and though small in number, proved most successful. The chairman of the assembly was James F. Dewey, manager of the A. G. Dewey Co.'s woolen mills at Quechee, Vt.

The chairman in charge of the organization of these assemblies is Dr. Herbert Schofield, principal of Loughborough College in England, a leading British scientist and engineer. Dr. Otto Böhler, managing director of the Böhler steel works near Vienna, and one of the leading steel men in Central Europe, is the chairman of the Vienna executive committee in charge of the convention arrangements.

Between two and three thousand Rotarians from North America will sail for Vienna between June 3 and 10, on the Rotarian fleet composed of six ships from four different lines, and will arrive in Vienna for their international convention starting June 22.

S.T.A. Weavers Plan Interesting Meeting March 30

The Weavers' Section of the Southern Textile Association, as recently announced, will hold its spring meeting at the Southern Manufacturers Club, Charlotte, N. C., March 20, with E. A. Franks, Greenville, S. C., chairman, in charge. Questions for discussion at the meeting are as follows:

In weaving rayon fabrics, what is the best weaving tension—tight, medium or slack?

Which is the best way to draw-in a rayon crepe?

What is the best method to use in combing or leasing warps to be drawn or twisted?

What is the best type of shuttles to use for rayon crepe filling?

On rayon crepes, what is the best method of friction let-off—chain, leather or rope?

What is the approximate speed to run rayon through the slasher?

What is the proper per cent of stretch to take out of rayon at slashers?

What is best loom speeds to run rayon voiles—rayon crepes?

Should rayon crepe warps be run with or without temples? If with temples what is the best kind of roll to use?

In slashing rayon what are the advantages of creeling section beams straight in, and creeling as in cotton slashing?

How many looms can a fixer handle on the new Cotton King loom?

What is the best method to adopt in weaving colored filling over warp sateen stripe in the borders or a handkerchief?

What advantages is a center filling fork in weaving? What disadvantages is a center filling fork in weaving?

The meeting will convene at 10:00 a.m. and will include a dutch luncheon at the club.

Durene Association Holds Semi-Annual Meeting

At the semi-annual meeting of the Durene Association of America at the national headquarters, in New York, Monday, members of the association were shown a dramatic fashion display, featuring Durene fabrics in morning, sports, spectator sports, street, formal afternoon and evening clothes with accessories, also of Durene. Each of the 35 garments shown represented a leading manufacturer who now has Durene fashions available for volume sales. Many of the garments shown have already been purchased for spring promotion by retail stores.

N. C. College Style Show to be Held in April

The annual style show of the North Carolina State College at Raleigh, will be held on April 16 and students from the following institutions will participate: Meredith College, Raleigh; Queen's College, Charlotte; Eastern

many a felt . . . *was ruined by hard water!*

Soap curds like these are deposited on textiles during processing in hard water, lowering quality and wasting supplies.

THE manufacture of paper-makers' felts, as you probably know, calls for great care and skill. The finish must be perfect.

It's difficult enough to achieve a high standard in this line of work, without the additional handicap of hard water. As a well-known Mid-Western manufacturer wrote to us last November:

"Paper mill felts ... are used mechanically. They must be free of grease. Scouring and finishing them in hard water occasionally resulted in our running through a felt that was not entirely free of grease. Soap grease might occasionally be precipitated in the felt, giving us much trouble. . . . When using hard water, quite frequently pieces of blankets would come through improperly scoured, and would have a rancid odor, and soap was no doubt precipitated right on the fibre. This would also happen with the felts . . . If soap was ever precipitated on the fibre with hard water, nothing that could be done would remove it.

"We are perfectly satisfied with the Permutit water and have never had occasion to regret the installation. We were certain that there would be sufficient saving in the value of soap used to warrant our making the installation. . . . Were we to build another mill in another locality tomorrow, we would use Permutit water unless the water to which we had access was zero soft."

Notice that he says that soap saving alone will pay for his Permutit Equipment. So that the difficult-to-estimate saving in rejected felts is all pure profit! He saves money, eliminates processing troubles and improves quality, all at the same time!

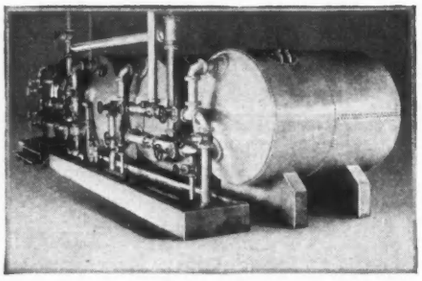
This is typical of the reports received from Permutit users. Everywhere that there are textile mills, no matter whether they handle wool, cotton, silk, rayon or other fibres, Permutit Equipment is making extra money for its owners.

Let us look into *your* water problem, free—analyze the water, and make recommendations. Meanwhile, write for a copy of our interesting booklet, "Reducing Textile Costs and Troubles."

THE PERMUTIT COMPANY

440 Fourth Avenue, New York, N. Y.

Manufacturers of all types of Zeolite, Hot and Cold Lime Soda, and Lime-Barium Water Softeners—Sand Filters—Iron, Oil and Manganese Removing Filters—Continuous Boiler Blow-off Equipment—Ranarex CO_2 Indicators and Recorders—Other Power Plant and Water Treating Specialties.



Permutit *Water Treating Equipment*

TWENTY-THREE SALES OFFICES THROUGHOUT THE UNITED STATES

Carolina Teachers College, Greenville; Catawba College, Salisbury; Louisburg College, Louisburg; Peace Institute, Raleigh. More than 60 young women will wear dresses which they have made, as a part of their regular class work, from fabrics designed and woven by textile students and supplied to them by the Textile School of the State College.

Study Your Market

(Continued from page 25)

run decline by expanding other departments of our business.

As stated before, the actual details of our experience are not of particular importance. Further, our action has been so recent that our plans are still in a formative state and we are not in a position to say that this, or that, specific method will bring success, even if we believed that such recommendations would be useful in view of the different problems confronting each mill. What we do believe is important, however, from our standpoint at least, is that we decided somewhat over a year ago that we must definitely conduct our business by getting the facts impartially and then facing these facts. We believed that drifting along in the usual manner and hoping for a change for the better could no longer be justified in the face of changing conditions. As outlined, we subjected our business in all its phases to a cold analysis to determine what should be done today in the light of what we might expect to face tomorrow. We shall continue to regard our business in this light in the future.

Preventing Edge Loops and Snarls in Silk Weaving

(Continued from page 27)

Small snarls can be made by a rebounding shuttle. If but one twist is snarly and loopy on the edge, the opposite box should be watched to see if the shuttle rebounds slightly. If this is the case, the binder spring can be tightened up slightly to overcome the trouble. Poor shuttle check will also give very small loops, and can be fixed accordingly.

A small piece of fur glued on the lay will at times correct this fault, and sometimes a small piece of paper will do the same. The idea is to search out the trouble and fix it before it has ruined a piece of merchandise.

There are many causes for snarls and loops, and for each there is a remedy. Weaving a neat-appearing edge is within the possibilities of every fixer. There is, in fact, a certain amount of truth in the saying that "the selvage on the cloth is 90% of the sale."

Indian Orchard Offers New Spun Rayon Yarn

Indian Orchard Co., of Indian Orchard, Mass., is offering a new spun rayon yarn called "Shara." It is said to be suitable for dress fabrics, upholstery and drapery fabrics, rugs, bath mats and towelings, and to combine well with other fiber yarns or rayon.

Display of Comfortables Features Celanese

The possibilities of synthetic yarn fabrics for the manufacture of comfortables was illustrated at a fashion show given by Palmer Bros., of New York, at the Savoy-Plaza Hotel, New York, Feb. 18. Silk and synthetic yarn fabrics were effectively used together, and in some instances the comfortables on display were entirely of synthetic yarn. Celanese fabric held an important place at the showing. One attractive comfortable was of silk, with a border and back of Celanese pastel satin. Another interesting number was of apple-green and orange-and-yellow silk with a white cotton filling. The fashion show was arranged by Miss Clare Elliott of N. W. Ayer & Son, of New York; Miss Virginia Hammill, stylist, spoke on decorative art.

Analysis of Sulfonated Oils

(Continued from page 38)

Analysis of Sulfonated Oils, G. W. Schultz, *J. Am. Leather Chem. Assoc.*, Vol. 15, p. 283-95 (1920).

The Determination of Inorganic Impurities in Sulfated Oils, R. Hart, *J. Am. Leather Chem. Assoc.*, Vol. 15, p. 404-6 (1920).

The Determination of Total Saponifiable Matter in Sulfated Oils by Difference, R. Hart, *J. Am. Leather Chem. Assoc.*, Vol. 15, p. 495-8 (1920).

The Analysis of Sulfonated Oils, Anon., *J. Am. Leather Chem. Assoc.*, Vol. 15, p. 595-9 (1920).

The Analysis of Sulfonated Oils—An Improvement of the Hart Method, C. G. Bumcke, *J. Am. Leather Chem. Assoc.*, Vol. 16, p. 7-8 (1921).

Improved Formula for the Calculation of Inorganic Impurities in Sulfated Oils, R. Hart, *J. Am. Leather Chem. Assoc.*, Vol. 16, p. 159-61 (1921).

Ueber die Bestimmung der Organisch Gebundenen Schwefelsäure in Sulfurierten Oelen, K. H. Bauer, *Chem. Umschau*, Vol. 35, p. 25-6 (1928).

Bestimmung der Organisch Gebundenen Schwefelsäure in Sulfurierten Oelen nach der "Amerikanischen Methode" durch kochen mit N/1 Schwefelsaure, W. Herbig, *Seifensieder-Ztg.*, Vol. 55, p. 427-8 (1928).

Methods of Testing Sulfonated Castor Oil, A. H. Grimshaw, *Amer. Dyestuff Reporter*, March 5, 1928.

Ueber die Bestimmung der Organisch Gebundenen Schwefelsäure in Sulfurierten Oelen, C. Riess, *Collegium*, Vol. 657, p. 21, (1929).

Massanalytische Bestimmung des Organisch Gebundenen SO_3 in Sulfurierten Oelen, R. Hart, *Chem. Umschau*, Vol. 36, p. 295-7 (1929).

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Sulfonated Oils—Committee Report, G. W. Priest et al, *J. Amer. Leather Chem. Assoc.*, Vol. 24, p. 570-6 (1929).

Ueber Sulfurierte Oele, K. Nishizawa and K. Winokuti, *Chem. Umsch.*, Vol. 38 p. 1 (1931).

British Textile Mission to Japan

For the purpose of returning the visit of Baron Dan to England during 1921 and 1922, a mission of British textile manufacturers, headed by Sir Ernest Thompson, recently paid a visit to Japan. This mission will return to Great Britain next month, leaving St. John on March 27. Sir Ernest Thompson is chairman of the joint committee of the British cotton trade organizations, and the commission includes 20 representatives of Britain's leading cotton and textile industries. In the party are Sir Thomas Allen, James Bell, secretary of the United Textile Factory Workers' Association; William A. Crowther, Lieutenant-Colonel Reginald Morcom, C.B.; E. Louis Beale, C.B.E.; Dr. S. H. C. Briggs, 11 St. Quentin Hill, O.B.E., E. and F. A. Barnes.

Cotton Goods Statistics Confirm Activity of February

Statistical reports of production, sales and shipments of standard cotton cloths during the month of February 1931, made public this week by The Association of Cotton Textile Merchants of New York, confirmed recent reports of record breaking sales of cotton goods. The figures cover a period of four weeks.

Production during February amounted to 212,168,000 yd., or at the rate of 53,042,000 yd. per week.

Sales during February were 326,691,000 yd., equivalent to 154% of production.

Shipments during February were 248,354,000 yd., equivalent to 117% of production.

Stocks on hand at the end of the month amounted to 319,328,000 yd., representing a decrease of 10.2% during the month. This is the lowest figure recorded for stocks since these statistics became comparable on Jan. 1, 1928. The decrease of more than 36,000,000 yd. during February has been exceeded on only two occasions,—in the months of September and October, 1930.

Unfilled orders on Feb. 28, 1931 were 395,802,000 yd., representing an increase of 24.7% during the month. Unfilled orders are higher than at any time since December, 1929, and are now well in excess of stocks.

Opens Plant After 39 Week Shutdown

The American Printing Co., Fall River, Mass., has announced that No. 2 mill of the cotton goods division would re-open March 9. The plant has been idle for 39 weeks, since June 7, together with the four other plants. Upon resumption of operations the statement says that a revised schedule of wages will be placed in effect which will set wages to correspond with other mills in the section. No mention of opening their other mills was made, but it is believed this will be seen shortly.

Plan to Increase Duties on Laces Abandoned

The United States Tariff Commission announces that in accordance with Senate Resolution 476, 71st Congress, the investigation for the purposes of section 336 of the tariff act of 1930 with respect to laces, lace fabrics, and lace articles, produced wholly or in part on the levers or levers go-through lace machine, the bobbinet machine, or the lace-braiding machine, has been discontinued and dismissed without prejudice. The purpose has been a possible increase in duties on these items.

Goodbye to losses from *ceiling condensation*

YOU never see those damaging beads of moisture on ceilings of textile mills insulated with Celotex Roof Insulation Board.

For Celotex, by preventing ceiling condensation, fortifies mills permanently against losses from this menace.

Celotex Roof Insulation protects building interiors against the rapid temperature changes that cause moisture to condense.

With Celotex there is no danger of moisture collecting on the underside of roofs and dripping down to damage fabrics and rust machinery. No rotting of costly roof structures. And no more loss of fuel dollars through heat-leaking roofs.

Moreover, Celotex helps to maintain an even temperature in winter and shuts out scorching summer heat—assuring a higher peak of labor production.

Celotex Roof Insulation Board is applied quickly and easily over any roof deck or right over the old built-up roofing.

Architects and heating engineers recommend it because of its high insulating value and low cost of application.

It comes in units measuring 2 ft. x 5 ft. approximately $\frac{1}{2}$ in. thick . . . and also in laminated thicknesses of from 2 to 8 plies.

Write us for facts and figures on the results Celotex Roof Insulation has obtained for textile manufacturers in your section. Our engineers will be glad to co-operate with you, or will work with your own engineers, in solving your particular problem.

The Celotex Company, 919 North Michigan Ave., Chicago, Illinois. In Canada: Alexander Murray & Co., Ltd., Montreal. Sales distributors throughout the World.

CELOTEX
BRAND
INSULATING CANE BOARD
ROOF INSULATION

The word Celotex (Reg. U. S. Pat. Off.) is the trademark of and indicates manufacture by The Celotex Company.

Southern Textile Exposition Scheduled for Oct. 17 to 22, 1932

Nineteen months hence the tenth Southern Textile Exposition will be held in Textile Hall. The dates have been definitely confirmed, namely, Oct. 17 to 22, 1932. This is a little earlier than the exposition last year.

Practically three-fourths of all the available space has been applied for. Allotments will not be made until the coming summer, after all applications have been plotted on the diagrams. There will be large exhibits of spinning and other major operations. Doubtless many new improvements will be perfected in all lines of textile machinery in the next year and a half.

The management of the Exposition is making its preliminary plans for the most attractive show ever held. The same executive officers of Textile Hall Corp. who planned and directed the last show will be in active charge. Arrangements for the comfort and pleasure of visitors will be the most extensive ever undertaken.

Botany Shows Printed Crepes

Wide wool crepe fabrics in printed patterns for spring and early summer wear are being offered by Botany Worsted Mills. The cloths are 54 in. wide and are being shown in a variety of floral and plaid effects. It is reported that a number of the leading cutters have already placed contracts for these goods.

Navy to Buy Towels and Bedspreads

Bids to supply the Bureau of Supplies and Accounts, U. S. Navy, Washington, D. C., with 6,000 cotton bedspreads, white, type E, will be received March 24. On the same day the bureau will open bids to supply it with 12,000 towels, huckaback, white, cotton warp and linen weft, with dark blue stripe running through center.

Canadian Cotton Industry Census

The latest census report on Canada's cotton industry which covers the year 1929, reveals the fact that the 80 establishments then in operation represented an investment of $104,985,047 and produced goods to the value of $90,079,956. The number of employees numbered 22,093, and received in salaries and wages the sum of $18,552,937.

Advance Buying Urged To Aid Business Pick-Up

Roy A. Cheney, secretary of the Associated Knit Underwear Manutacturers of America, has written to the Hoover Emergency Committee for Employment, urging advance buying by wholesalers and retailers of their 1931 needs as a means of stimulating industry and providing employment. The recommendation is understood to be receiving the close attention of the President's committee. Mr. Cheney proposed that the distributing groups immediately purchase from 25% to 30% of their year's needs. Copies of the letter were sent to manufacturers throughout the country and many of these business men replied with messages to Mr. Cheney endorsing the proposal.

Nashua Featuring Decorative Blankets for Spring

The new decorative blankets being produced by Nashua (N. H.) Mfg. Co., in a number of novel designs through a special process which provides even greater variety than the jacquard loom, have proven so successful that production is being increased to meet the demand. Many retailers see in the new creations an attractive feature for spring and summer.

Business News

P. J. Collins, Now Vice-President of United Aniline Co.

P. Joseph Collins has become vice-president of the United Aniline Co., Boston, Mass.

In Charge of Gears and Forgings Pittsburgh Office

George H. Davis has been appointed to the Pittsburgh district sales office of Gears & Forgings, Inc. Mr. Davis was transferred from the Milwaukee office and will be in charge of the Pittsburgh territory. He has been in the gear business for many years and is familiar with all gear problems in steel mills. The Pittsburgh office is at 2818 Smallman Street.

Upchurch Now Making Jacquard Lacing and Tie-Tape

C. L. Upchurch & Sons, Athens, Ga., have begun the manufacture of jacquard lacing and tie-tape and other braided material, at plant located at Bogart, Ga., which will be known as the Bogart Tape & Processing Co. The machinery equipment is furnished by New England Butt Co., Providence, R. I.

Cellophane Prices Reduced

A reduction in prices of Cellophane is announced by du Pont Cellophane Co. Discussing the cut, officials of the company were quoted as saying:

"It is in line with the company's policy to reduce prices whenever increased demand for Cellophane makes this possible. The recent greatly increased use of moisture proof Cellophane, an exclusive patented product, in new and wider fields makes it possible to reduce it even more than regular Cellophane."

To Speak on Product Development

Safford K. Colby, vice-president, Aluminum Co. of America, will speak at the dinner and meeting of the Industrial Marketing Executives of New York at the Pennsylvania Hotel on Tuesday evening, March 17, on "Product Development as an Approach to Markets." C. R. Cary, vice-president, Leeds & Northrup Co., Philadelphia, and vice-president of the American Management Association, will preside. Mr. Colby is in charge of sales development and sales promotion for the Aluminum Co. and has directed the campaign for the use of aluminum and aluminum alloys in a wide variety of new applications and products.

Westinghouse Temporarily Reduces Working Hours

Beginning March 1, all the works and offices of the Westinghouse Electric & Mfg. Co. will omit Saturday operations, except as involved in maintaining adequate service with customers and others with whom the company does business, according to an announcement by President F. A. Merrick. As this reduction of service represents approximately 10%, that amount of reduction will apply to all salaried employes. Similar arrangements have already been put into effect as to employes on an hourly basis.

Mr. Merrick emphasizes the point that this arrangement is solely an emergency measure to spread the work through this period of business depression and that normal arrangements will be reinstated with the advent of normal times.

C. P. Pond Joins Truscon Steel Co. as Vice-President

The Truscon Steel Co. announces the appointment of Clark P. Pond as vice-president in charge of engineering anl sales, effective February, 1931. Mr. Pond was formerly connected in a similar capacity with the David Lupton's Sons Co. He is widely known in the building field, having originated the top-hung continuous windows, tension operators and projected windows of vertical and horizontal types. His own roof design for improved natural ventilation and lighting is being utilized in hundreds of buildings today. In his executive position with the Truscon Steel Co., Mr. Pond will interest himself largely in problems of engineering and sales of all Truscon products.

Coffin Awards Made to 38 General Electric Employes

Employes' ideas, resulting in valuable contributions to the progress and efficiency of the General Electric Company, were recognized and rewarded Feb. 20 by the Charles A. Coffin Foundation, established by that company in 1922. Awards of merits, consisting of a certificate and a monetary consideration, were made to 38 General Electric men representing many classes of workers and scattered among the company's various factories and commercial offices.

Seven of the recipients are shop workmen; four are foremen; one is a construction foreman; six are tool designers and expert mechanics; eleven are engineers; six are commercial men; and three are administrative employes.

Duriron Branch Office Opened in Cleveland

The constantly increasing use of Duriron, Durimet and the Durco Nirosta steels has made necessary the establishment of a branch office in Cleveland, in charge of a Duriron engineer, and devoted wholly to the sale and service of Duriron, Durimet and alloy steels. This office is in charge of E. D. Brauns. It is located at Room 528 Leader Building, Superior Avenue and East Sixth Street.

NEWS about MEN

✦ E. W. MONTGOMERY has been elected president of Pisgah Mills, Inc., Brevard, N. C. B. E. GEER was elected vice-president and general manager, and GEORGE NORWOOD, secretary-treasurer, all three of Greenville, S. C. It is understood that H. E. ERWIN will be retained as superintendent.

✦ GEORGE J. DANIELS of the Daniels Mfg. Co., East Brookfield, Mass., has been appointed a member of the town's finance committee for the ensuing year.

✦ DAVID N. TAFT, president and treasurer of the David N. Taft Mfg. Co., Oxford, Mass., has been appointed chairman of the finance committee of that town. EDWIN N. BARTLETT, president and treasurer of the Edwin Bartlett Co., North Oxford, and JAMES WHITTAKER, treasurer of James Whittaker & Sons, Inc., Oxford, were also appointed members of the committee for two years.

✦ BEECHER M. CROUSE, president of Skenandoa Rayon Corp., Utica, N. Y., was elected a director in the International Heater Co. to fill the vacancy caused by the recent death of Frank E. Wheeler, president and director of the concern.

✦EDGAR E. PAQUETTE, president of E. E. Paquette & Sons, Woodstock (Ont., Can.) and MRS. PAQUETTE have returned from a motor trip to Los Angeles, Calif., where they spent the winter.

✦ SHERWIN H. SMITH, Cleveland, Ohio, has been elected a director of the Federal Knitting Mills Co., Cleveland, to succeed CHARLES D. GENTSCH.

✦ JOHN BARNES, president of the Blood Knitting Co., Amsterdam, N. Y., has returned from a sojourn in Florida.

✦ D. H. CONWAY, president of the Conway Knitting Mills, Oswego, N. Y., was among the principal speakers at the annual gathering of the New York State Conference of Mayors held last week at Albany.

✦ FRANK EDMANDS, former director of the Draper Corp., Hopedale, Mass., has been re-elected town clerk of that town.

✦ WILLIAM LAPWORTH, head of William Lapworth & Sons, Milford, Mass., celebrated his 87th birthday anniversary at his home in Hopedale, Mass., on March 3.

✦ JOSEPH ENRIGHT, formerly of Atlanta, Ga., who is vice-president of the recently formed Asheville (N. C.) Weavers, Inc., which will manufacture and sell home spun fabrics to the wholesale trade, will spend most of his time in New York, in connection with selling the products of the new plant, which soon will be in operation, it is said.

✦ JAMES E. SHIELDS has resigned as vice-president and director of sales for the Chenango Textile Corp., Binghamton, N. Y.

✦ FRANK H. WILLARD, president of the Graton & Knight Co., Worcester, Mass., has been appointed a member of the executive committee of the National Association of Manufacturers by President John E. Edgerton, who is president of the Lebanon (Tenn.) Woolen Mills.

✦ E. A. TERRELL, of The Terrell Machine Co., Inc., Charlotte, N. C., addressed the textile class of the Georgia School of Technology March 4 on "What of the Future of the Machine Age?"

✦ G. C. WILLIAMS, vice-president of the Chalmers Knitting Co., Amsterdam, N. Y., is among the newly elected directors of the Mutual Insurance Co. in Oneida County.

✦ CLARE H. DRAPER, vice-president of the Draper Corp., Hopedale, Mass., has resigned as a member of the finance committee of that town on account of his removal to Spartanburg, S. C.

✦ A. FERGUSON MACINTYRE recently resigned as treasurer and general manager of the Fitzgerald (Ga.) Cotton Mills, and J. H. MAYES, president and superintendent of the Cochrane (Ga.) Cotton Mills Co., near Fitzgerald, will also act as manager and superintendent of the Fitzgerald Cotton Mills.

✦ DAVID BIGWOOD, treasurer of the Bigwood Woolen Co., Spencer, Mass., has been named a member of the town's finance committee for the coming year.

✦ HERNY C. GREENLAW, for five years Lowell, Mass., agent for the Tremont & Suffolk Mills, now out of existence, and later agent for the Nashua Mfg. Co., has resigned to become agent of the Bates Mfg. Co., of Lewiston, Me. Mr. Greenlaw will be succeeded at the Nashua Co.'s plant by W. W. RAWLINSON, superintendent.

✦ L. C. SAWYER, for the last 19 years agent of Brown Mills, (American Woolen Co.) at Dover-Foxcroft, Me., and closely associated with the plant in various executive capacities for the last 38 years has resigned. Mr. Sawyer announces that he has no immediate plans for the future but will pass six weeks in Florida, he and his wife having left for St. Petersburg.

✦ SAMUEL STEWART, who has been agent of the Bates Mfg. Co., Lewiston, Me., since 1919, has resigned that position, after being elected vice-president at a meeting of the directors held in Augusta, Me. He will devote his time to private interests as soon as he is relieved from active management.

✦ HENRY BARRETT, recently general manager of Penmans, Ltd., has been elected managing director of Dominion Woolens & Worsteds, Ltd., large Canadian manufacturers of woolen and worsted yarns and fabrics, with plants located at Peterboro, Hespeler, Milton and Orilla, Ont. Mr. Barrett resigned from Penmans, Ltd., a short time ago, after over 28 years' active work with that organization.

✦ H. CAPRILES, export manager of Messrs. Wolsey, Ltd., woolen knit goods manufacturers of Leicester, Eng., is now visting in Canada. He has just returned from a coast to coast trip, accompanied by D. F. BAIRD, of Toronto, the firm's Canadian representative.

✦ A. P. DUCHESNEAU, formerly manager of the Lund Mfg. Co., Rock Hill, S. C., and family have gone by motor to Los Angeles, Cal., where he has accepted a similar position.

✦ L. M. FOWLER, general manager of the Palatine Dyeing Co., St. Johnsville, N. Y., has been chosen a director of Luxor Textiles Inc., at that place, for the ensuing year.

✦ C. PRATT HARRINGTON, manager of the textile division of the Fisk Rubber Co., New Bedford, Mass., has resigned his position effective March 1. DONALD J. BRIGHTMAN, formerly assistant manager, has been named to succeed Mr. Harrington in charge of the textile division, which includes the Fisk Mills in New Bedford, Pawtucket, R. I., and Jewell City, Conn.

✦ H. LUNDY has been appointed general manager of Penman's, Ltd., succeeding H. BARRETT, it was announced following annual meeting of stockholders March 2.

✦ WILLIAM P. SAUNDERS has assumed his new duties as manager of the Pinehurst Silk Mills, Hemp, N. C., after resigning as assistant superintendent of the Aurora Mills, Burlington, N. C.

✦ H. WILSON ZWALLY, general manager of Westerhoff Bros. Co. silk mill at Ephrata, Pa., for 30 years, has been elected cashier of the Akron (Pa.) National Bank.

✦ H. W. ORMAND, former superintendent of the Union Bleachery, Greenville, S. C., has gone to Thomaston, Ga., where he will succeed T. C. PERRY as superintendent of the Thomaston Bleachery, Mr. Perry having resigned there to become associated with the Sand Spring Bleachery in Oklahoma. Mr. Perry, however, does not assume his new position for several months, it is said. Mr. Ormand has been connected with the Union Bleachery for 12 years and has been superintendent for much of that time.

✦ ERNEST A. ADAMS, JR., superintendent of the Webster (Mass.) Mills of the American Woolen Co., has been transferred to the Rochdale (Mass.) Mills of the same company as acting agent.

✦ W. N. DARBY, superintendent of the Alpine Cotton Mills, Morganton, N. C., has resigned.

✦ JAMES LUND, superintendent of the Lund Mfg. Co., and family have gone to Worcester, Mass., following the closing of the plant at Rock Hill.

✦ R. L. SULLIVAN, formerly general superintendent of the Icard (N. C.) Cordage Co., is now general manager of the Sherwood Mills, Inc., at Maiden, N. C., of which he is now one of the owners.

✦ GEORGE J. PETHYBRIDGE, former superintendent of the dyeing department of the Phoenix Woolen Co., Stafford Springs, Conn., and MRS. PETHYBRIDGE, will celebrate their 50th wedding anniversary at their home in West Fitchburg, Mass., on March 12.

International Photo

The brief and recently ended strike at Lawrence, Mass., brought four of the American Woolen Co's manufacturing officials together in conference. From left to right they are: Ernest A. Johnson, agent of Washington Mills; E. J. C. Shulze, agent of Ayer Mill; J. Simel Mercer, general manufacturing agent of the parent company; Walter M. Lamont, agent of Wood Worsted Mill.

✦ H. W. BERRY has been made master mechanic at the Henrietta (N. C.) Mill No. 1.

✦ J. B. BOYTER, who for some time has been second hand in the spinning department of the Whitmire, S. C., plant of the Aragon-Baldwin Cotton Mills, Inc., has been promoted to overseer of spinning in the Chester, S. C., plant of the company. He is succeeded by S. B. PRUITT, overhauler of the spinning department of the Whitmire plant.

✦ HENRY LAPOINT has resigned as overseer of weaving for the Lund Textile Co., Inc., Fisherville, Mass., to accept a position in Three Rivers, Mass.

✦ HENRY HAMEL, overseer of carding at the Beoli Mills of the American Woolen Co., Fitchburg, Mass., has accepted a similar position with the Rochdale (Mass.) Mills of the same company.

✦ J. T. SHIRLEY, formerly master mechanic of the Champlain Silk Mills, Whitehall, N. Y., has started in the automobile business in that city.

✦ C. D. WEBB, formerly of Augusta, Ga., has been made overseer of weaving at the Aiken Mills, Langley, S. C.

✦ THEODORE BRESSETE has been made overseer of dyeing for the Swift River Woolen Co. of Westerly, R. I.

✦ J. H. CLARK, formerly of Goldsboro, N. C., is now overseer of spinning, winding and finishing at the Smithfield (N. C.) Mills, Inc.

✦ FRANK FURNESS has been named night overseer of weaving at the Rochdale (Mass.) Mills of the American Woolen Co.

✦ W. G. HOLT, formerly of Augusta, Ga., is now overseer of night carding at the Aiken Mills, Langley, S. C.

✦ M. J. BATES, formerly of Sylacauga, Ala., is now overseer of the cloth room of the Winfield unit of the Alabama Mills Co.

Obituary

Clarence A. Reynolds

Clarence A. Reynolds, general manager and director of Belding-Corticelli, Ltd., Montreal, Canada, died at his home in Westmount, Que., on Feb. 24, in his 62nd year. About a year ago he was compelled by ill health to seek rest and following a few weeks at the Atlantic sea coast he returned home, but the hoped for recovery failed to materialize. Mr. Reynolds was connected with Belding-Corticelli for almost 50 years, advancing step by step to the position which he held at the time of his death. He was the dean of the silk industry in Canada, organizing and becoming first president of the Silk Association of Canada. He was also a past president of the Montreal Better Business Bureau, a member of the Islemere Golf Club and the Montreal Board of Trade, as well as the Engineers Club of Montreal, and the Manhattan Club, New York. He is survived by his widow and two daughters.

Charles H. Stevens

Charles H. Stevens, president of the Stevens Yarn Co., Inc., New York, died March 7 at his home 51 Fifth Ave., in that city. He was in his 71st year. After graduation from Harvard, class of 1882, Mr. Stevens entered the publishing business in Boston, in which he was engaged for many years. For the last 25 years he was identified with the textile business in Philadelphia and New York. He is survived by his widow and by two brothers, Harold W. Stevens and Ralph L. Stevens, both of whom are members of the Stevens Yarn Co.

John Sherman Kenyon

John Sherman Kenyon, for 50 years a textile manufacturer in South County, R. I., and cotton broker in Providence, died at Kenyon, R. I., in the house where he was born 70 years ago. Until about 12 years ago, Mr. Kenyon operated the E. Kenyon & Son Mills, of which he had assumed charge when his father, Elijah Kenyon, died in December, 1881. The village of Kenyon took its name from Elijah Kenyon, who established a cotton mill there in 1856. John S. Kenyon later turned to the cotton brokerage business. Although widely known, he declined to seek or accept public office, the one exception being his appointment by Gov. William Gregory to represent Rhode Island at the Pan-American exposition in 1901.

John H. Lillibridge

John H. Lillibridge, former superintendent of the Whitinsville (Mass.) Cotton Mills, died at his home in Auburn, Mass., on Feb. 21, aged 75 years. He was a native of Richmond, R. I., and was located in Providence, R. I., for about 20 years before going to Whitinsville. He was a member of the masonic fraternity and for 14 years was superintendent of the Masonic Home, Charlton, Mass. He leaves a widow, one daughter and a son. Funeral was in Worcester, Mass., and burial in Central Village, Conn.

John Lepier

John Lepier, former agent of the New York (N. Y.) Mills Corp., died at the home of his daughter in New Hartford, N. Y., on March 4, after a long illness. He was born in Stonehouse, Scotland, on May 4, 1859, and after coming to this country located in Fitchburg, Mass., where he was superintendent of the Fitchburg Mfg. Co. from 1893 to 1898 and the Fitchburg Worsted Co. until 1903. In 1912 he moved to Lowell, Mass., and later to Utica, N. Y. While in Fitchburg he was president of the Common Council in 1902. He was a member of the Masonic fraternity. Two daughters survive. Burial was in Pawtucket, R. I.

Thomas H. Wood

Thomas H. Wood, retired silk manufacturer, died March 8 at South Coventry, Conn. He was born in Saddleworth, England, 84 years ago. Mr. Wood first organized a shoddy mill about 50 years ago which he conducted for 5 years. He next engaged in the silk throwing business. About 1888 he organized the T. H. Wood Co., South Coventry, and manufactured silk lines until his retirement in 1922.

Henry S. Howe

Henry S. Howe, agent of the Pepperell Mfg. Co., at Biddeford, Me., in the 80s, died at his home in Longwood, Mass. He was born in Haverhill in 1848. After graduating from Harvard he made a special study of the cotton business for four years and then became manufacturing agent of plants in Norwich, Conn., Fall River, Mass., and Biddeford, Me. He was also on the directorate of several textile mills.

Jacob K. Altemus

Jacob Krewson Altemus, head of the firm of J. K. Altemus, Philadelphia, widely known builder of winding machines for many years died March 8. Mr. Altemus was a leader in his field and widely known through the textile industry.

Hiram P. Foard

Hiram P. Foard, former secretary and later president of the Leaksville Woolen Mills, Spray, N. C., died March 4 in a hospital at Morganton, N. C.

NEWS about MILLS

Cotton

Southern Mfg. Co., largest textile plant of Athens, Ga., resumed operations this week, according to announcement of A. G. Dudley, R. O. Arnold and Andrew C. Erwin, trustees of the property, who state that several weeks of full daytime operations is assured. This means that approximately 500 workers will again resume labor. This mill was shut down Jan. 17, when a temporary receivership was ordered by the federal bankruptcy court, which named the three receivers to manage the property.

Augusta (Ga.) Factory, shirting, sheeting, drills and duck, has discontinued operations, releasing about 500 persons. The closing is stated as permanent.

Stark Mills, Hogansville, Ga., one of the Callaway group of textile mills, equipped with more than 35,000 spindles has been taken over and will be operated by the United States Rubber Co., as announced on page 88 of last week's issue.

*__Lancaster Mills,__ Clinton, Mass., in liquidation, will hold their annual stockholders meeting in the Chamber of Commerce Building, Boston, on March 13, to consider and act upon the question of authorizing the directors to accept or reject an offer for the entire remaining real estate, which includes all the main manufacturing buildings, in considering of the assumption of the taxes assessed by the town for 1930, approximately $32,000.

American Printing Co., Fall River, Mass., Mill No. 2 of the Cotton Division reopened March 9, giving employment to 400 persons. The Cotton Division consists of five mills, all having been closed since June 7.

Amoskeag Mfg. Co., Manchester, N. H., is filling an order for Ford Motor Co. for 1,000,000 yd. of cloth. The company also is doing a large business in handkerchief cloth. Several hundred employes have been added to the force to rush both orders.

*__Pisgah Mills, Inc.,__ Brevard, N. C., will begin operations within two weeks, with 6,000 spindles on fine yarns. Extensive repair work is being done. Payroll of the mills is about $1,500 per week.

Steele Cotton Mill Co., Lenoir, N. C., is now operating on a 55-hour a week schedule, manufacturing plush yarns.

Carolina Textile Corp., Dillon, S. C., has placed additional orders with Borne Scrymser Co. for Breton Minerol process equipment for its second mill.

Hartsville (S. C.) Cotton Mills have plans for installation of an early date of modern new picking and card room machinery to be electrically driven.

Cutter Mfg. Co., Rock Hill, S. C., has installed additional equipment in the dye plant, purchased from J. Fred Welch, Charlotte, N. C.

*Indicates previous mention of project.

Certified Laboratories, Inc., Marble Falls, Tex., manufacturers of absorbent cotton and gauze for the use of hospitals, have plans under way for the manufacture of adhesive tape and kindred lines from textiles for medical and hospital use. This plant was formerly the **Marble Falls Textile Mills Co.** New equipment has been installed at a cost of $250,000.

Esmond Mills, Ltd., which recently opened their Canadian branch in Granby, Que., are devoting their entire production efforts to the making of blanket cloths for infants' and children's wear. Jacquard looms are being used exclusively.

Wool

Columbia Woolen Mills, Columbia City, Ind., are arranging for early resumption of production, after a shutdown of several weeks. The company has recently secured a contract from the Government for army overcoating material, totaling 37,500 yds.

Channing Smith Textile Corp., Cherry Valley, Mass., which was petitioned in bankruptcy by three creditors with total claims of $55,035.05 on Feb. 14, was adjudicated bankrupt by the U. S. District Court at Boston on March 3. The next step will be the filing of schedules of liabilities and assets, after which the matter will be referred to the referee in bankruptcy in Worcester, Mass., before whom the first meeting of the creditors will be held to elect a trustee. No date has been set for such a meeting yet.

Farr Alpaca Co., Holyoke, Mass., has announced that shortly 550 more looms will be started on its rayon cloth line. The firm now has 1,700 looms working on rayon. When the machine work now in progress is finished there will be 2,250 looms. More than 100 operatives will be added to the working force.

Arden Mill of the **American Woolen Co.,** Fitchburg, Mass., is removing all of its old belt-driven looms and will replace them with modern motor driven looms.

Victory Mill of the **W. E. Tillotson Mfg. Co.,** Pittsfield, Mass., closed since Oct. 25, will reopen April 1 employing about 200 hands. The Victory plant has been sold to an out-of-town woolen manufacturing company whose name has not been disclosed. Only about 100 hands were employed when the mill was closed.

Chase Mills of the **American Woolen Co.,** Webster, Mass., through the main office of the company at Boston, have notified the selectmen of Webster and Dudley, Mass., that at the present time they do not have any intention of resuming operations at the plant, closed for 18 months. The company asked both towns to give it some relief in its taxes on its property in the two towns to be paid this year. The matter was referred to the assessors of both towns.

Silver Lake Worsted Mills, Inc., Providence, R. I., recently organized with a capital of $25,000, have leased the local mill and equipment of the **Gaunt Worsted Mills, Inc.,** on Ethan St., Olneyville district, for a period of three years, and will proceed with operations at once. The Gaunt company will retain its corporate charter, although inactive. The plant has been closed down for about six months past. Arthur Gaunt, secretary of the Gaunt Worsted organization, is president of the new Silver Lake company.

Hiram Leach & Sons, Huntingdon (Que., Can.) woolen and worsted manufacturers, have installed additional looms in their mill.

Watchorn & Co., Ltd., Merrickville (Ont., Can.), which had their well-equipped woolen mills badly damaged by fire a few weeks ago, have now decided to rebuild. The fire destroyed the picking, carding and spinning departments and the machinery for these divisions will have to be replaced.

Knit

William Carter Co. has added a line of women's foundation garments to its production at the mill in Springfield, Mass. This comes as one of the expansions in its rayon department, following the transfer of all cotton goods production to Barnesville, Ga.

New England Knitting Mills, Inc., Worcester, Mass., have been incorporated with a capital stock of 800 shares without par value to manufacture polishing and knit cloths at 105 Shrewsbury St., Worcester. The officers and directors of the corporation are: President, Louis P. Pemstein, president of the Worcester (Mass.) Dusting Mill, Inc.; treasurer, Harry M. Cotton; clerk, Harry I. Shapiro.

Republic Knitting Mills, Detroit, Mich., have concluded arrangements for the purchase of all assets, including machinery and equipment, of the **Pawtucket Hosiery Co.,** Hillsboro, N. H., a subsidiary of **Contoocook Mills Corp.,** Hillsboro, now being liquidated. It is understood that the Republic company will use the Pawtucket Hosiery Co.'s assets for an eastern branch mill.

Columbine Knitting Mills, Inc., Columbia, Miss., men's hosiery, have ordered 15 additional knitting machines and loopers, which will be installed as soon as received at the plant. The additional machinery will increase the capacity of the mill at least 40%. The plant now employs 50 men and women and has been running at capacity both day and night since Jan. 1.

Ballston-Stillwater Knitting Co., Ballston Spa, N. Y., is making repairs to carding machines considerably damaged by fire originating in the picking room and the production of the plant will be decreased for a few weeks.

Fonda (N. Y.) Glove Lining Co. has announced a 10% reduction in wages in all departments.

Union Mills, Inc., Herkimer, N. Y., have denied report that the plant was to continue in operation under the ownership of Joseph H. Reaney.

Velvet-Knit Corp., Oswego, N. Y., has leased additional space in an industrial building in that city for expansion of facilities. The company will continue production at its present plant and utilize the newly acquired space for cutting and wrapping.

Franklin Hosiery Co., Philadelphia, Pa., has been conferring with the Board of Trade, Hightstown, N. J., relative to the establishment of a new mill in that town, to give employment to about 150 persons for initial operations. A committee has been formed, headed by C. Stanley Stults, Hightstown, to arrange details of the project.

**Indicates previous mention of project.*

Silk

M. Glasgall Silk Co., Paterson, N. J., has been organized with a capital of $125,000, to take over and operate local company of same name, with broad silk mill on Godwin Ave. Incorporators of the new company include Jack Paer and L. R. Roemer, both of Paterson.

Glenhill Silk Co., Paterson, N. J., recently organized with capital of 1,000 shares of stock, no par value, to operate a local mill, will be represented by Abraham I. Feltman, 45 Church St., Paterson, an attorney. Incorporators of the company include Charles DeWalsche and William DeMayo, both of Paterson.

Luxite Silk Co., Paterson, N. J., has been chartered with a capital of 2,500 shares of stock, no par value, to take over and succeed to the **Luxite Broad Silk Co.**, with local mill on Madison St. The principal incorporators of the new company are Fred and Baruch Auerbach.

Duplan Silk Co., New York, has purchased through H. M. McCord, New York, a mill in Marietta, Pa., formerly owned by the Amalgamated Silk Corp. and a mill in Slatedale, Pa., formerly the property of Post & Sheldon.

Amalgamated Silk Corp., Norfolk, Va. Plans are under way for the early resumption of the former local mill of this company at Fortieth and Killam Sts., now owned by Nathan Block.

***Carl Stohn of Can., Ltd.**, Granby (Que., Can.), manufacturers of curtain draperies, etc., are enlarging their plant by the addition of approximately 27,000 sq.ft. The main building is of saw tooth construction and built sufficiently large to provide space for 192 looms.

Associated Textiles of Canada, Ltd., Louiseville, Que., are pushing construction on a new addition, and propose to have ready for service at earliest possible date.

Rayon

DuPont Rayon Co., Old Hickory, Tenn., is arranging for increased production on or about March 15. A number of workers have been added to the force.

Miscellaneous

Wm. Lowenthal & Co., Cohoes, N. Y., have purchased the cotton batts department of the **United Waste Mfg. Co.** in that city, but the plant itself and equipment were not involved. United Waste Mfg. Co., Cohoes, N. Y., is now operating on part time schedules with a reduced working force.

Oregon Linen Mills, Inc., Salem, Ore. In connection with a reorganization of this company, plans are under way for a refinancing program to provide additional funds for the purchase of new equipment for installation at the plant.

Buckeye Cotton Oil Mills, Memphis, Tenn., a subsidiary of Procter & Gamble, are making white cellulose sheeting from linters for sale to rayon companies.

TEXTILE PATENTS

BATHING-SUIT. 1,786,869. George E. Rutledge, Chicago, Ill. Assigned to The Munsingwear Corp., Minneapolis, Minn.

BOBBIN for electrical feelers. Eldridge R. Holmes, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

BOBBIN for weft-replenishing looms. 1,786,682. Richard G. Turner, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

BOBBIN, Sewing machine shuttle. 1,786,618. Henry G. Johnson, East Hampton, Conn. Assigned to Summit Thread Co., East Hampton, Conn.

BOBBIN support for weft-replenishing looms. 1,786,680. John F. Tinsley, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

BOBBIN support for weft-replenishing looms. 1,786,655. Eldridge R. Holmes, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

BOBBIN support for weft replenishing looms. 1,786,685. Kenneth J. Unwin, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

BOBBIN tips, yieldable support for. 1,786,692. Carl P. Bergstrom, Millbury, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

CLOTH-LIKE fabric. 1,786,781. Milton J. Shoemaker, Madison, Wis.

COLOR slide control for multicolor magazines. 1,786,711. Albert A. Gordon, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

CLUTCH. 1,786,708. Anthony D. Gargoliniski, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

CLUTCH for axminster-loom tube frames. 1,786,667. John Lyle, Philadelphia, Pa. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

CONNECTING mechanism for jacquard levers. 1,176,656. Eldridge R. Holmes, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

COTTON-BOLL extracting and cleaning device. 1,786,904. George E. Evans, near Waco, Tex.

COTTON-CHOPPER. 1,786,661. James A. Laird, Huntingdon, Tex. Assigned 10 per cent to R. A. Courteney, Lufkin,, Tex.

COTTON picker. 1,786,851. Edward A. Johnston, Chicago, Bert R. Benjamin, Oak Park, and Clarence R. Hagen, Chicago, Ill. Assigned to International Harvester Co.

FABRIC. 1,786,569. Charles F. Lee, Philadelphia, Pa.

HARNESS-SHEAVE stand for looms. 1,786,710. Anthony D. Gargoliniski, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

KNITTED cap and method of making the same. 1,787,043. David Karger, Milwaukee, Wis.

KNITTED fabric. 1,787,264. Morris B. Goldberg, Philadelphia, Pa. Assigned to Eagle Knitting Mills, Philadelphia, Pa.

KNOTTER. 1,787,102. Britton E. Byrd, Gastonia, N. C. Assigned to Mill Devices Co., Inc., Gastonia, N. C.

LOCK-STITCH sewing machine. 1,786,944. Martin Hemleb, Elizabeth, N. J.

LOOM dobby. 1,786,712. Albert A. Gordon, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

LOOM, Harness sheave stand for. 1,786,696. Allen E. Brickman, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

LOOM, Weft replenishing. 1,786,659. Victor H. Jennings, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

LOOMS, lay and shuttle box for. 1,786,703. James F. Colgan, Providence, R. I. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

LOOM Let-off for narrow-ware. 1,786,657. Eldridge R. Holmes, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

LOOM Picker. 1,787,182. Valentin Weiss, Berlin-Weissensee, Germany.

LOOM, Shuttle box construction for. 1,786,702. James F. Colgan, Providence, R. I. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

MACHINE for cutting bias fabrics. 1,787,208. Joseph P. Morris, Bridgeport, Conn.

MECHANICAL warp stop motion. 1,786,686. Walter H. Wakefield, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

METHOD of bleaching cellulose of any kind. 1,787,395. Ladislav Rys. Ruzomberok, Czechoslovakia.

METHOD of manufacture cellulose and textile fibers from vegetable matter. 1,786,890. Carl Alfred Braun, Munich, Germany.

METHOD of treating textiles of cellulose fiber. 1,786,421. Adolph Walter Buhlmann, Mount Vernon, N. Y.

MULTICOLOR magazine for looms. 1,786,688. William M. Wattie, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

PICKER stick retriever for looms. 1,786,709. Anthony D. Gargoliniski, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

PILE fabric. 1,787,051. Walter F. Miller, Freehold, N. J. Assigned to A. & M. Karagheusian, Inc., New York, N. Y.

Textiles on N. Y. Exchanges

The following shows the movements of the leading textile stocks listed on the New York Stock Exchange and Curb for the week ended March 11.

	High	Low	Last Sale	Net Change
Adams Millis	29	27½	29	+½
*American Thread, pfd	3¼	3¼	3¼	—
American Woolen	11	9½	10¼	+⅝
American Woolen, pfd.	36¼	29½	33½	+1⅜
*Assoc. Rayon, pfd.	58½	58	58	+ ⅛
Belding-Heminway	3⅜	3⅜	3⅜	—
*Blumenthal	20¼	18⅞	18⅞	—1⅛
Botany Mills, A	2	2	2	—
Cannon Mills	23½	21½	23⅜	+1½
Century Ribbon	5½	5	5	— ⅜
Collins & Aikman	15⅜	14½	15	—
Consolidated Textile	1¼	1	1⅛	— ⅛
*Courtaulds, Ltd	7½	7½	7½	— ¼
Duplan Silk	13½	13½	13½	+ ⅛
Durham Hosiery, pfd.	22	22	22	—
Gotham Hosiery	9½	8¾	9½	+ ⅛
Industrial Rayon	76½	70	76¼	+2¼
Kayser, Julius	22¾	20	22¾	+1⅜
Kendall, pfd.	38	37	38	+ ⅛
Mallinson	4⅜	4	4⅜	— ⅛
*Mock Judson	7	5	7	+2
Mohawk Carpet	20½	16	20½	+4¼
Munsingwear	29	29	29	—
Pacific Mills	22¼	20½	20½	—2
*Powdrell & Alexander	25⅛	25⅛	25⅛	— ⅛
Real Silk Hosiery	27	21½	27	+1½
*Tubize Chat B	12⅜	9	10½	+ ⅛
United Piece Dye Works	31⅜	28⅜	30	+ ⅜

*Listed on Curb.

New England Textile Stocks

Quotations at "Public Sale" are based on last sales at Boston Public Auctions and Boston Stock Exchange. Bid and Asked prices are latest quotations of dealers.

	Sale	Bid	Asked
Am. Mfg. Co.	52	50	55
Amoskeag	10	....	..
Arlington	16½	18	20
Associated Textile	36½	34	37
Bates	59½	59	62
Berkshire, Associates, com.	7½	12	..
Berkshire Associates, pfd.	25	40	..
Bigelow-Sanford, com	25½	....	..
Boott Mills	120½	....	95
Edwards	80¾	58	62
Esmond, pfd.	98	95	99
Farr Alpaca	50½	44	46
Hamilton Woolen	40	35	..
Hill	9	9	12
Indian Orchard	20½	15	..
Ludlow	115	110	115
Merrimack, com	35	17	..
Nashua, com	7½	6	8
Nashua, pfd	29½	30	32
Naumkeag	84	84	84
Newmarket	16½	12	..
Otis	43	31	..
Pacific	23	....	..
Pepperell	79¼	79	82
Plymouth Cordage	69	68	71
York	8¾	6	8

Textile Calendar

National Association of Waste Material Dealers, Eighteenth Annual Meeting, Congress Hotel, Chicago, March 16 to 18, 1931.

Southern Textile Association, Weavers' Division, Manufacturers Club, Charlotte, N. C., March 20, 1931.

Silk Association of America, annual meeting, Association offices, New York, March 25, 1931.

Wool Blanket Manufacturers Association, Quarterly Meeting, Hotel Pennsylvania, New York, March 27, 1931.

Southern Textile Association, Carders' Division, John C. Calhoun Hotel, Anderson, S. C., April 3, 1931. (Tentative)

The Cotton Manufacturers Association of Georgia, Annual Meeting, Atlanta-Biltmore Hotel, Atlanta, Ga., April 7 and 8, 1931.

Knitting Arts Exhibition, Commercial Museum, Philadelphia, April 13 to 17, 1931.

National Knitted Outerwear Association, Benjamin Franklin Hotel, Philadelphia. Directors' meeting, April 13; annual convention April 14.

National Association of Hosiery and Underwear Manufacturers, annual meeting, Commercial Museum, Philadelphia, April 16.

Southern Textile Association, Eastern Carolina Division, N. C. State College, Raleigh, N. C. April 17, 1931. (Tentative)

American Cotton Manufacturers Association, Thirty-fifth Annual Convention, Bon Air-Vanderbilt Hotel, Augusta, Ga., April 23 to 25, 1931.

Exposition of Chemical Industries, Grand Central Palace, New York, May 4 to 9, 1931.

Southern Textile Association, Master Mechanics' Division, Parker District High School, Greenville, S. C., May 8, 1931. (Tentative)

Phi Psi Textile Fraternity, 29th Annual Convention, Bradford Arms Hotel, Sagamore, Mass., May 8-10, 1931.

Southern Textile Association, Annual Meeting, (Place to be announced later) June 12-13, 1931.

The Cotton Manufacturers Association of North Carolina, Twenty-fifth Annual Convention, Sedgefield Inn, Greensboro, N. C., June 19-20, 1931.

TEXTILE WORLD Cotton and Wool Index Numbers

COTTON INDEX NUMBERS

Date	Cotton	Yarns	Gray Goods	Colored Goods	Aver. for Cloths	Group Average
July 31, 1914	100	100	100	100	100	100
1925						
January	192	197	195	173	184	187
February	197	196	195	174	185	187
April	196	194	193	180	187	188
July	197	183	185	176	181	182
October	174	189	193	178	186	186
1926						
January	167	175	177	162	170	171
February	165	172	176	160	168	169
April	153	163	161	155	158	159
July	149	149	151	141	146	147
October	106	141	147	144	146	143
1927						
January	107	134	140	140	140	138
February	113	136	143	141	142	140
April	118	136	143	142	143	140
July	143	149	156	145	151	150
October	168	176	184	169	176	176
1928						
January	151	163	166	166	166	165
February	148	159	163	166	165	163
April	164	160	160	165	162½	162
July	174	167	165	168	166½	167
October	157	161	162	164	163	162
1929						
January	162	166	158	169	163½	164
February	162	163	157	173	165	164
April	163½	164	157	173	165	165
July	149	160	149	166	158	158
October	147	160½	155	161	158	158
1930						
January	138	149	141	157	149	149
February	125	144	134	157	145	145
April	131	139	129	156	143	142
July	105	120	119	142	130	128
October	85	110	115	125	120	117
1931						
January	82	102	107	124	115	112
February	88	104	106	124	115	112

THE upward tendency displayed by the raw cotton index in January continued throughout February and in the fourth week of the latter month touched 90, or 8 points above the January average. This strength in the raw material, together with the improved outlook in the yarn and goods markets, affected sympathetically cotton manufactures which are now slightly higher than they were at the end of January. In the fourth week of February the latter indices were as follows: Yarn 104, up 2 points; grey goods 107, unchanged; and colored goods 125, up 1. While the long-continued retreat of the cotton indexes was checked in February, the situation from the standpoint of spinners' and weavers' replacement margins still appears very unsatisfactory. Yarns and cloths are still at or close to their recent lows, whereas raw cotton is ten points above its December low point.

The wool indexes continued to decline in February under the weight of large world stocks and curtailed manufacturing operations. The greater portion of the decline in this group occurred in the fourth week of the month, the indexes for that period being as follows: Wool, 104; tops, 117; yarns, 138. The wool goods index was unchanged awaiting the opening of the new season about the middle of March.

WOOL INDEX NUMBERS

Date	Wool	Tops	Yarns	Cloth	Group Aver.
July 31, 1924	100	100	100	100	100
1925					
January	215	213	211	229	221
February	259	266	253	231	245
April	219	234	230	241	235
July	216	217	216	239	227
October	216	212	212	227	220
1926					
January	215	213	211	229	221
February	209	208	208	226	217
April	181	193	198	224	208
July	173	184	189	215	199
October	178	186	193	209	198
1927					
January	178	187	190	209	198
February	179	186	188	211	198
April	177	182	184	211	196
July	180	183	183	211	196
October	185	185	189	211	199
1928					
January	194	193	186	212	201
February	196	202	191	214	205
April	199	206	198	215	208
July	204	206	203	214	209
October	197	197	203	212	206
1929					
January	199	198	201	211½	206
February	198	196	201	211	205
April	187	189	198	211	202
July	169	170	188	211	194
October	164½	169	188	211	194
1930					
January	148	161	177	211	188
February	138	150	173	209	183
April	127	139	164	202	175
July	125	135	158	200	171
October	124	135	154	200	170
1931					
January	112	127	148	197	165
February	106	122	143	197	162